

Shell Oil Company



P.O. Box 831
Houston, Texas 77001

November 5, 1982

Mr. Ronald J. Firth
Chief Petroleum Engineer
State of Utah, Div of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

Dear Mr. Firth:

SHELL-USA 14-18
SECTION 18, T38S-R19E
SAN JUAN COUNTY, UTAH

Enclosed is a copy of our federal Application for Permit to Drill and a survey plat for the subject exploratory test. The A.P.D. was filed with the Minerals Management Service on September 22, 1982. It is anticipated that the federal A.P.D. will be approved soon.

The drill site is located adjacent to a BLM Wilderness Study Area. The site was carefully selected in accordance with the desires of BLM representatives to minimize the environmental impact to the area. Minimum disturbance to the area will be created by drilling at this location.

Based on the environmental concerns, we hereby request an exception to Rule C-3 (General Well Spacing Requirements) of the State of Utah Oil and Gas Conservation General Rules and Regulations for the subject location. As illustrated on the plat, Shell controls all acreage within a 660-foot radius of the staked location.

Should additional information or clarification be necessary to support State of Utah A.P.D. approval at the staked location, please contact me at (713) 870-3216.

Yours very truly,

G. M. Jobe
Administrator, Regulatory-Permits
Rocky Mountain Division

RLT:beb

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>			5. LEASE DESIGNATION AND SERIAL NO. U-29972 ✓
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME
2. NAME OF OPERATOR Shell Oil Company			7. UNIT AGREEMENT NAME
3. ADDRESS OF OPERATOR P. O. Box 831, Houston, Texas 77001 Attn. G. M. Jobe Rm 5468 WCK			8. FARM OR LEASE NAME USA
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface 280' FSL & 690' FWL of Section 18 At proposed prod. zone			9. WELL NO. 14-18
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 23 miles north of Mexican Hat, Utah			10. FIELD AND POOL, OR WILDCAT Wildcat ✓
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	280' 280'	16. NO. OF ACRES IN LEASE 2549	11. SEC., T., R., M., OR RLE. AND SURVEY OR AREA SW/4 SW/4 Section 18 T38S-R19E
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	N/A	19. PROPOSED DEPTH 2450' <i>PROPOSED</i>	12. COUNTY OR PARISH San Juan
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 6390' GR			13. STATE Utah
23. PROPOSED CASING AND CEMENTING PROGRAM			20. ROTARY OR CABLE TOOLS Rotary
22. APPROX. DATE WORK WILL START* Upon permit approval			

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT

SEE 10 POINT PLAN

ATTACHMENTS:

10 POINT PLAN - ATTACHMENT A
BOP EQUIPMENT - ATTACHMENT B
CHOKE MANIFOLD - ATTACHMENT C
SURFACE USE PLAN - ATTACHMENT D
SURVEY PLAT - ATTACHMENT E
VICINITY TOPO MAP - ATTACHMENT F
DRILL PAD LAYOUT - ATTACHMENT G
DRILL PAD CROSS SECTIONS - ATTACHMENT H
PRODUCTION FACILITIES LAYOUT - ATTACHMENT I
ARCHAEOLOGY REPORT FORWARDED TO MINERALS MANAGEMENT SERVICE & BLM UNDER
SEPARATE COVER

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED G. M. Jobe TITLE Administrator DATE 9/21/82
Regulatory-Permits

(This space for Federal or State office use)

PERMIT NO. _____

APPROVAL

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

APPROVED BY _____

TITLE _____

CONDITIONS OF APPROVAL, IF ANY:

CC - BLM - Monticello, Utah
MMS - Durango, Colorado

DATE: 11-17-82BY: Harmon L. Stout

COMPANY SHELL OIL COMPANY

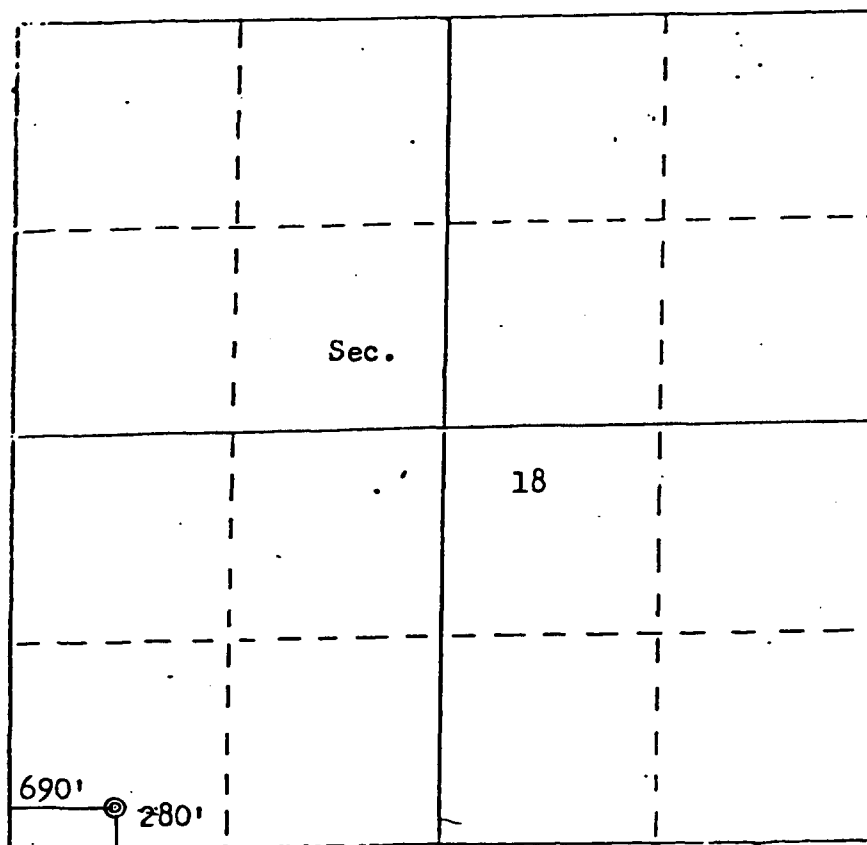
LEASE USA WELL NO. 14-18

SEC. 18, T. 38S, R. 19E

SAN JUAN COUNTY, UTAH

LOCATION 280' FSL 690' FWL

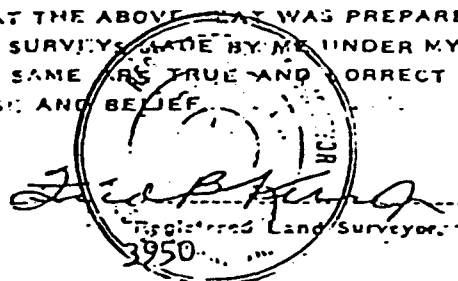
ELEVATION 6390 ungraded ground



SCALE—1 INCHES EQUALS 1 MILE

THIS IS TO CERTIFY THAT THE ABOVE MAP WAS PREPARED FROM
FIELD NOTE OF ACTUAL SURVEYS MADE BY ME UNDER MY SUPER-
VISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE AND BELIEF

SEAL:



SURVEYED September 16, 1982

ATTACHMENT E

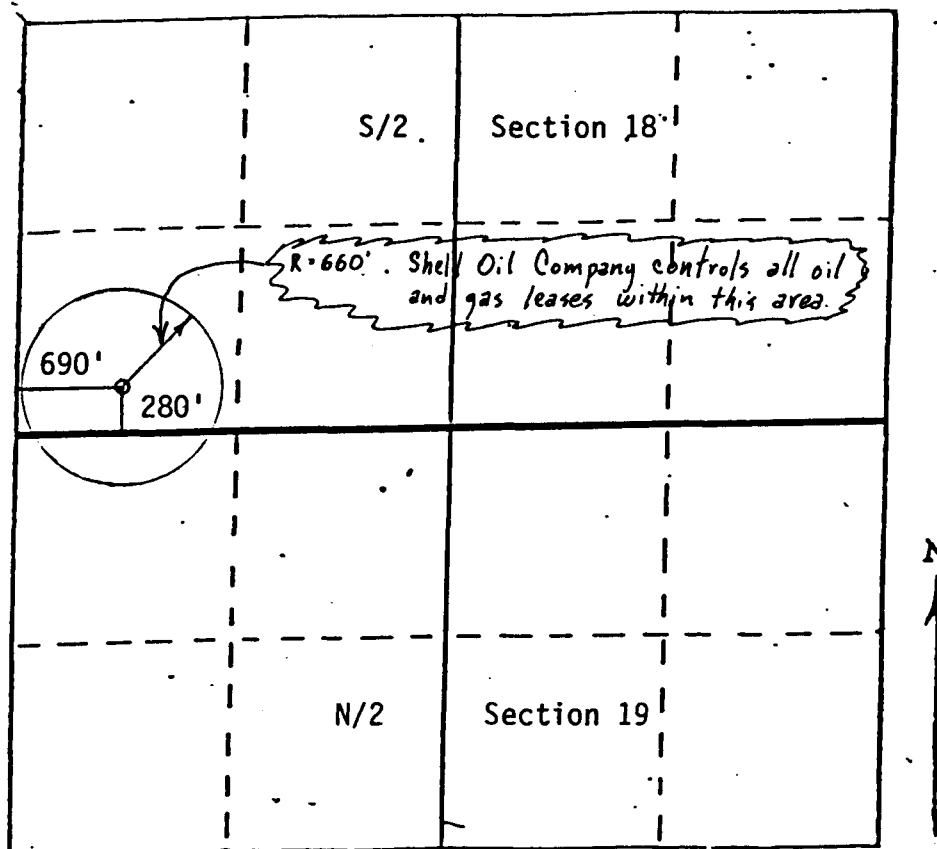
COMPANY SHELL OIL COMPANY

LEASE USA WELL NO. 14-18

SEC. 18, T 38S, R 19E
SAN JUAN COUNTY, UTAH

LOCATION 280'ESL 690'FWL

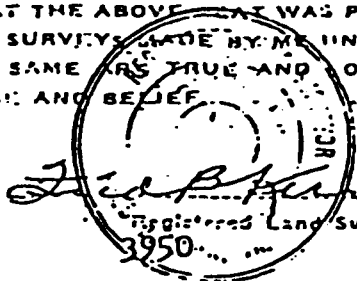
ELEVATION 6390 ungraded ground



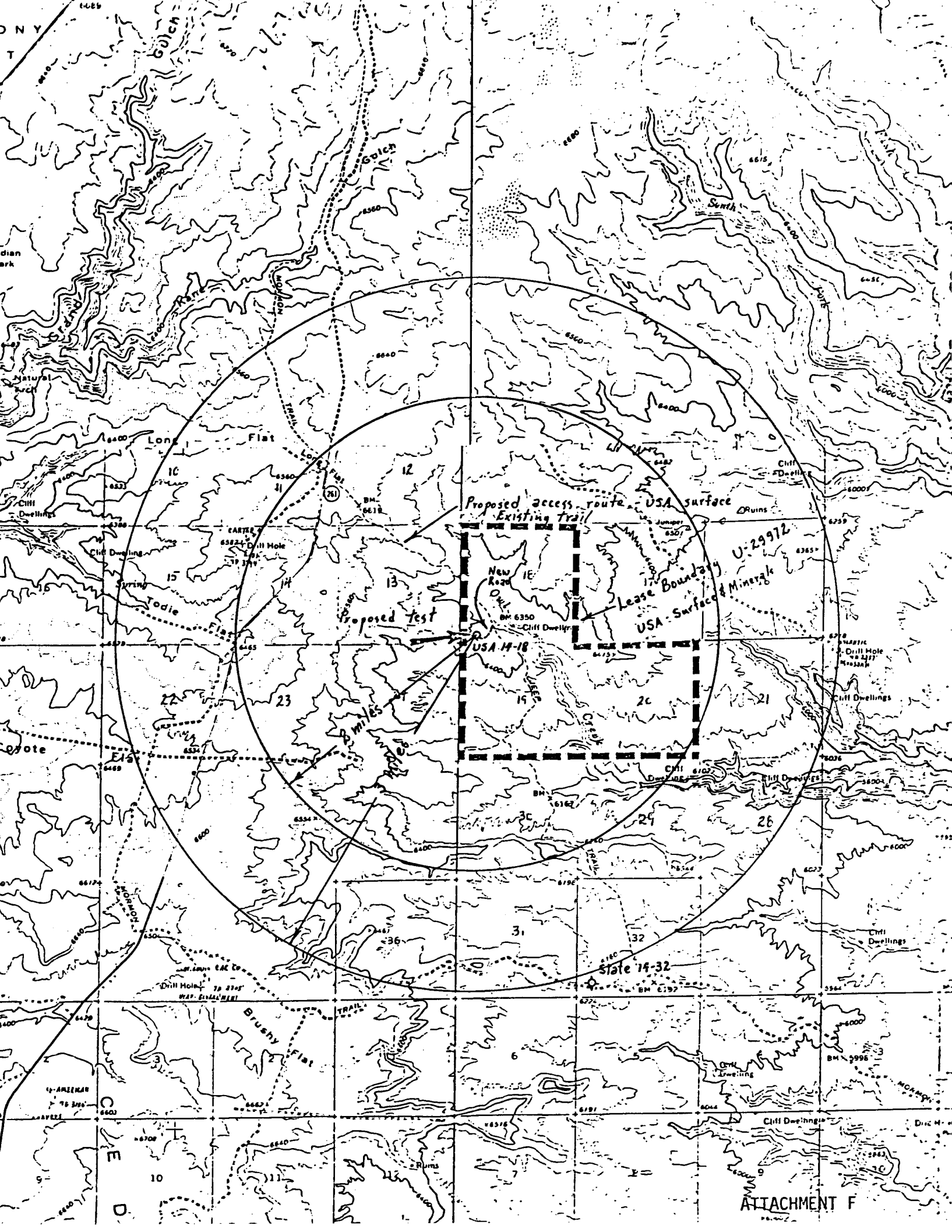
SCALE—4 INCHES EQUALS 1 MILE

THIS IS TO CERTIFY THAT THE ABOVE MAP WAS PREPARED FROM
FIELD NOTE OF ACTUAL SURVEY MADE BY ME UNDER MY SUPER-
VISION AND THAT THE SAME IS TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE AND BELIEF.

SEAL:



SURVEYED September 16, 1982



TEN-POINT COMPLIANCE PROGRAM

USA 14-18

Section 18, T38S-19E
San Juan County, Utah

1. Geologic Surface Formation

Cedar Mesa - (Permian)

2. Estimated Tops of Important Geologic Markers

Halgaito - 750'
Hermosa - 1205'
Desert Creek - 2205'
Paradox - 2400'
TD - 2450'+

3. Estimated Depths of Anticipated Water, Oil, Gas or minerals

Oil & Gas/Water - Desert Creek 2205'-2365'

4. Proposed Casing Program

- a. Surface Casing: 16" 65# H-40 Conductor at 40' cemented with Redi-Mix to surface. 8-5/8" 24# K-55 ST&C at 425' in 12-1/4" hole cemented to surface.
- b. Production Casing: Contingent on evaluation, 5-1/2" 14# K-55 ST&C to TD. Cement to 1700' in 7-7/8" hole. All new casing.

5. Minimum Specifications for Pressure Control

Attachment B is a schematic diagram of the blowout preventer equipment. The BOPs will be hydraulically tested to the full working pressure after nipping up and after any use under pressure. Pipe rams will be operationally checked each 24-hour period, as will blind rams each time pipe is pulled out of the hole. Such checks of BOP will be noted on daily drilling reports.

Accessories to BOP include a kelly cock, floor safety valve, drill string BOP and choke manifold with pressure rating equivalent to the BOP stack.

Attachment C is a schematic diagram of the choke manifold.

6. Type and Characteristics of the Proposed Circulating Muds

Fresh-water base mud from surface to TD. Adequate Barite on hand to control any unexpected pressures.

7. Auxiliary Equipment to be Used

See Attachments B and C.

8. Testing, Logging and Coring Program

- a. Tests: Possible two DSTs in Desert Creek as required for evaluation.
- b. Logging Program: GR surface to 425'
DLL/MSFL/GR/CAL/SP 425' to TD
DIL/GR/SP 425' to TD
FDC/CNL/GR/CAL 425' to TD
MPT/GR/CAL/CST/RFT 425' to TD (contingent on evaluation)
BHC/Sonic/ITT/GR/CAL 425' to TD
- c. Coring: Three 60' Cores
- d. Production: Production casing will be cemented and selectively perforated and acidized, contingent upon evaluation.

9. Anticipated Abnormal Pressures or Temperatures

No abnormal pressures or temperatures are expected to be encountered.

No hydrogen sulfide is anticipated. Control and safety equipment is on hand. Training is continuous.

10. Anticipated Starting Date and Duration of the Operations

The anticipated starting date is upon permit approval or as soon as possible after examination and approval of drilling requirements. Drilling operations should be completed within 10 days after spudding. Completion operations will be conducted as soon as possible after drilling rig release.

UTAH

MONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$ 21M/\$208M

WI - 60%

GR 6390'

12-18/19-82

Status: Drilling conductor.

12-20-82

Status: Cmt. conductor.

Should move in rotary tools today.

UTAH

MONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$ 23M/\$208M

WI - 60%

GR 6390'

13-3/8" csg @ 120'

12-21-82

Status: Moving in and rigging up.

95% moved; 80% rigged up.

UTAH

MONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$ 64M/\$208M

WI - 60%

GR 6390'

13-3/8" csg @ 120'

12-22-82

Status: RURT.

100% moved, 85% rigged up.

UTAH

MONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$101M/\$208M

WI - 60%

GR 6390'

13-3/8" csg @ 120'

8-5/8" csg @ 425'

12-23-82

156/36//1/12.5. Status: Hook up cellar pump.

Spud at 9 PM, 12-22-82

Dev: 3/4" at 120'

Location: 280' FSL & 690' FWL

Section 18, T39S-R19E

San Juan County, Utah

12-24-82

425/269//2/12.5. Status: Circ. for casing.

Dev: 3/4" at 321'

12-25-82

425/0//3/12.5. Status: Shut down for Christmas.

Ran 11 jts of 8-5/8" csg to 425'. Cmt w/225 sx

Class "H" w/2% CaCl₂, 1/4#/sx Flocele. Good

returns. Bumped plug at 1:30 PM. Cmt fell

back 70'. Did top job w/50 sx Class "H"

w/2% CaCl₂, 1/4#/sx Flocele.

12-26-82

425/0//4/12.5. Status: Crews off for Christmas.

12-27-82

425/0//5/12.5. Status: Nipple up.

UTAH

MONUMENT UPLIFT

Shell-USA 14-18
(WC) Drake #18
2450' Desert Creek Test
\$108M/\$208M
WI - 60%
GR 6390'
13-3/8" csg @ 120'
8-5/8" csg @ 425'

12-28-82

425/0//6/12.5. Status: Testing BOPE.

UTAH

MONUMENT UPLIFT

Shell-USA 14-18
(WC) Drake #18
2450' Desert Creek Test
\$115M/\$208M
WI - 60%
GR 6390'
13-3/8" csg @ 120'
8-5/8" csg @ 425'

12-29-82

585/160//7/12.5. Status: Drilling.
Mud: (fresh water)

UTAH

MONUMENT UPLIFT

Shell-USA 14-18
(WC) Drake #18
2450' Desert Creek Test
\$134M/\$208M
WI - 60%
GR 6390'
13-3/8" csg @ 120'
8-5/8" csg @ 425'

12-30-82

1200/615//8/12.5. Status: Drilling.
Dev: 1" at 632'; 3/4" at 1130'
Mud: 8.4 x 27

UTAH

MONUMENT UPLIFT

Shell-USA 14-18
(WC) Drake #18
2450' Desert Creek Test
\$184M/\$208M
WI - 60%
GR 6390'
13-3/8" csg @ 120'
8-5/8" csg @ 425'

12-31-82

1800/600//9/12.5. Status: Drilling.
Dev: 1/2" at 1584'
Mud: (.4368) 8.4 x 27

1-1-83

2137/337//10/12.5. Status: Drilling.
Dev: 0" at 1812'
Mud: (.4576) 8.8 x 35 x 9.2

1-2-83

2219/82//11/12.5. Status: Coring.
Mud: (.4576) 9 x 32 x 11.2

1-3-83

2290/71//12/12.5. Status: TIH for Core #3.
Core #1 - cut 42', rec. 31'.
Core #2 - cut 53', rec. 54'.
Mud: (.468) 9 x 35 x 9.4

UTAHMONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$198M/\$208M

WI - 60%

GR 6390'

13-3/8" csg @ 120'

8-5/8" csg @ 425'

1-4-83

2358/68//13/12.5. Status: Core #4.

Core #3 - cut 38', rec. 37'

Mud: (.467) 9 x 36 x 8.4

UTAHMONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$213M/\$208M

WI - 60%

GR 6390'

13-3/8" csg @ 120'

8-5/8" csg @ 425'

1-5-83

2514/156//14/12.5. Status: R.U. loggers.

Core #4 - cut and rec. 47'.

Dev: 1/2" at 2514'

Mud: (.458) 8.8 x 40 x 8.8

UTAHMONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$234M/\$208M

WI - 60%

GR 6390'

13-3/8" csg @ 120'

8-5/8" csg @ 425'

1-6-83

2514/0//15/12.5. Status: Circ. & W.O.O.

Ran DLL/FDC/CNL/BHC logs.

Mud: (.463) 8.9 x 40 x 10.9

UTAHMONUMENT UPLIFT

Shell-USA 14-18

(WC) Drake #18

2450' Desert Creek Test

\$243M/\$208M

WI - 60%

GR 6390'

13-3/8" csg @ 120'

8-5/8" csg @ 425'

1-7-83

2514/0//16/12.5. Status: P&A - rig release.

Set plugs as follows:

#1 2390-2190' 70 sx Class "H"

#2 525-325' 75 sx Class "H"

#3 Surface 10 sx Class "H"

Rig released at 5 PM, 1-6-83

Cost \$243,015

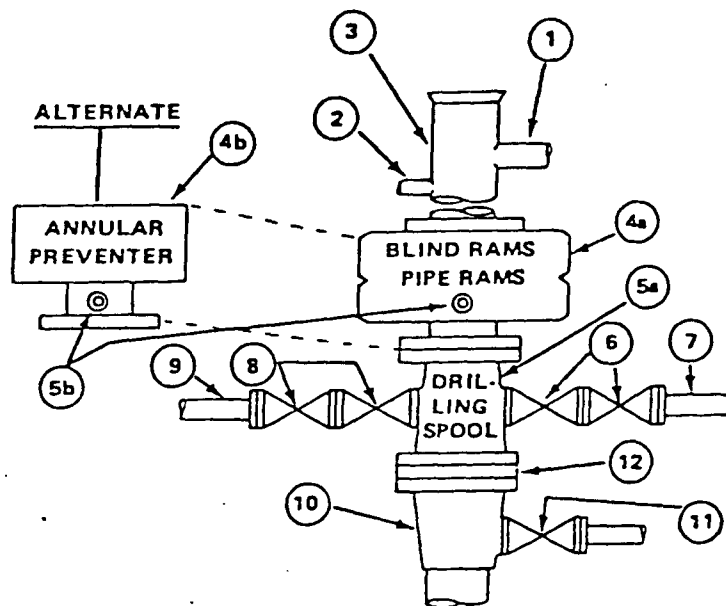


SHELL OIL
COMPANY

DRAWING AND CHECK LIST NO. 102
SHELL CLASS 2MR
2,000 psi Working Pressure

SHELL MINIMUM BOP STACK REQUIREMENTS			
No.	Item	Min. I.D.	Min. Nominal
1	Flowline		...
2	Fill up line		2"
3	Drilling nipple		
4a	Two single or one dual hydraulically operated rams*		
4b	Annular Preventer		
5a	Drilling spool with 2" and 2" outlets		
5b	2" and 2" outlets in ram or annular preventer. Run kill line and choke line from these outlets. (Alternate to 5a above.)		
6	Valves Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	2-1/16"	
7	Line to choke manifold		2"
8	Valves Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	2-1/16"	
9	Line to rig mud pump manifold		2"
10	Casing spool		
11	Valve Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	1-13/16"	
12	Wear flange or bushing		

* For well servicing — not mandatory to be hydraulically operated.



NOTE: Second wing valve on choke (6) and kill (8) lines
not mandatory unless drilling below 2,000'.

ATTACHMENT B

SHELL MINIMUM AUXILIARY EQUIPMENT REQUIREMENT

Master control with pressure regulating valve (If annular preventer used)
Hydraulic BOP operating unit. See below for detail. (Not mandatory for well servicing.)
Upper Kelly cock.
Kelly Saver sub with protector rubber.
Inside BOP, surface type, for each size drill pipe.
Full opening ball valve for each size drill pipe in use.
Labelled crossovers for each different connection in drill string.

OPTIONAL AUXILIARY EQUIPMENT

Lower Kelly cock.
— Unit Remote control.
Cup or plug type BOP tester with spare seals.

SHELL MINIMUM HYDRAULIC OPERATING UNIT SPECIFICATIONS

Accumulator volume — sufficient to make one position change on all hydraulically operated units and retain 1,000 psi (but not less than 200 psi above precharge) without pumps.

Pump capacity to recharge in 10 minutes from 1,000 psi (or 200 psi above precharge) to accumulator operating pressure.

Power for pumps — 1 source required — Electric or Air — 2 pumps required.

Lines from operating unit to BOP units

4,000 psi Minimum Yield ☒ Seamless steel lines

.70" minimum I.D. ☒ Seamless steel lines with Chiksan joints

☒ Hose per Sec. 3.20

Operating unit fluids: Hydraulic oil or soluble oil.

All controls shall be clearly marked to show unit operated. Blind Ram control to have easily removed latch or guard.

Sufficient bottled nitrogen or other back-up storage system to equal accumulator capacity, manifolded to by-pass accumulator and close BOP directly.

Alarm or visual indicator to show when accumulator is shut off from preventers.

SHELL MINIMUM MUD SYSTEM REQUIREMENTS

Pump stroke counters each pump.

OPTIONAL MUD SYSTEM EQUIPMENT

Degasser
Pit volume recorder with alarm.
Flow line monitor.
Trip tank (with 6th man)
Flow line gas separator

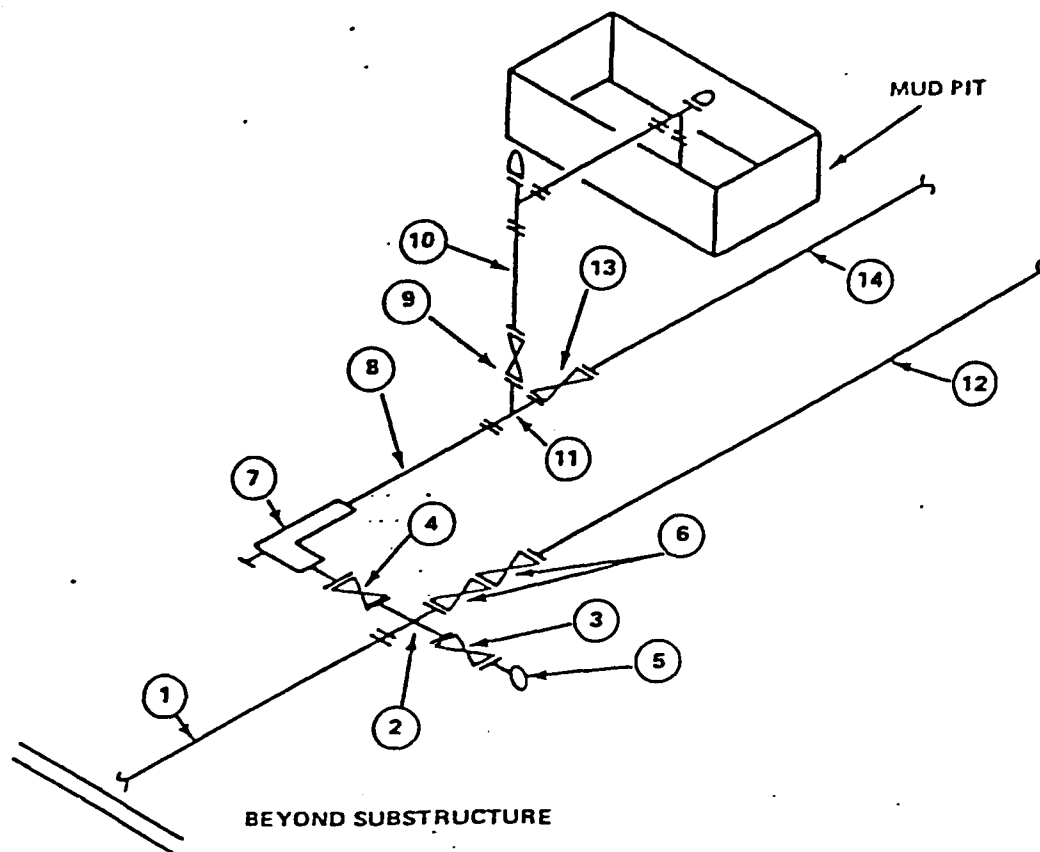
MISCELLANEOUS EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

1. All connections shall be welded, studded, flanged or Cameron clamp of comparable rating.
2. All flanges shall be API 6B or 6BX and ring gaskets shall be API steel RX or BX. Do not re-use BX rings. Always use new rings below lower most preventer when flanges are parted.
3. Drilling spools shall be forged or welded. Pipe spools not acceptable.
4. BOP stack shall be braced to subbase or suitable support by turnbuckled lines or rods. (No rigid connections.)
5. All gate valves shall be equipped with handwheels. Rams should have manually operated screw locking extensions (extended beyond subbase) ready for use.
6. For land rigs, the master control station and operating unit shall be located at ground level, a minimum of 50' from the well. If used, the remote station should be located near the driller's position. For marine rigs, the master control station and operating unit may be on the rig floor with the remote station located so that it is protected from the well area and accessible from a logical evacuation route. Hydraulic lines may be high pressure hose provided they meet the requirements in Section 3.20.L in the Shell BOP Control Manual. Inoperative condition of remote unit is not to interfere with operation of the master control unit.
7. Housing and heating should be provided for accumulator, blowout preventers, choke manifold where conditions warrant.
8. Contractor shall make no connection to casing head side outlets except by orders of Shell.
9. One spare set of ram blocks for the drill pipe in use shall be kept on rig.
10. Any misalignment of rig should be corrected to avoid undue wear of casing.
11. Four way valves shall be kept open or closed, not in neutral position.



SHELL OIL
COMPANY

MINIMUM CHOKE MANIFOLD
DRAWING NO. 201
SHELL CLASS 2M
2,000 psi Working Pressure



SHELL MINIMUM REQUIREMENTS				
No.	Item	Min. I.D.	Min. Nom.	Press. Rating
1	Line from drilling spool		2"	2000
2	Cross 2" x 2" Cross 2" x 2"			2000
3	Valve Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	1 13/16"		2000
4	Valve Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	1 13/16"		2000
5	Compound Pressure Gauge			
6	Valves Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	1 13/16"		2000
7	Adjustable Choke	1"		2000
8	Line		2"	2000
9	Valve Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	1 13/16"		2000
10	Line		2"	500
11	Tee		2"	2000
12	Line to Reserve Pit		2"	500
13	Valve Gate <input checked="" type="checkbox"/> Plug <input checked="" type="checkbox"/>	1 13/16"		2000
14	Line to Reserve pit		2"	500

ATTACHMENT C

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating. Low pressure lines downstream from a choke can contain screwed connections.
2. All flanges to be API 6B and ring gaskets shall be API RX.
3. All lines shall be securely anchored.
4. Choke to be equipped with tungsten carbide seat and needle and replacement parts shall be available on location.
5. Line from drilling spool to choke manifold to be straight as possible. Line downstream from chokes shall make turns by large radius bend or 90° bends using bull plugged tees.
6. Discharge line from choke, and choke bypass, should vent as far as practical from the well.
7. Additional specifications for Sour Service and Air/Gas Service are given in Shell Well Control Manual, Appendix 5.20 and Appendix 5.21.

MULTIPOINT REQUIREMENTS
SURFACE USE PLAN
USA 14-18
Section 18, T38S-R19E
San Juan County, Utah

1. Existing Roads

- a. The proposed drill site as staked with ground elevation is illustrated on the survey plat as Attachment E.
- b. The site is located approximately 23 miles north of Mexican Hat, Utah and is about 500 feet southwest of an existing trail road.
- c. All existing roads within a three-mile radius are illustrated on Attachment F.
- d. Improvement to the existing trail road will be necessary for narrow portions and will be limited to a total disturbed width of 20 feet.
- e. A permit will be obtained from the Utah State Highway Department, Al Richens (801) 637-1100, to access Highway 261.

2. Planned Access Road

A new access road will be constructed from the existing trail road to the drill site.

- a. Length - 500 feet±
- b. Width - 20 feet of total disturbance.
- c. Maximum grade - 5%.
- d. Turnouts - none.
- e. Drainage design - not required.
- f. Culverts - none.
- g. Surfacing material - none.
- h. Cattleguards - none

3. Location of Existing Wells

There are no known wells within a two-mile radius of the proposed test.

4. Location of Existing and/or Proposed Facilities

- a. There are no existing production facilities or pipelines in the area.
- b. In the event of production, the well will be produced into single well facilities at the well site.
 - (1) All production facilities will be accommodated on the illustrated drill pad with the tanks on the southwest side.
 - (2) The proposed facilities are illustrated on Attachment I.
 - (3) Construction materials will be purchased from private sources.
 - (4) All pits will be fenced to minimize any hazard to livestock and wildlife. A wire mesh covering will be used as needed if water or other fluid is produced into the pit.
- c. The reserve pit and that portion of the location and access road not needed for production or production facilities will be reclaimed in the methods described in the rehabilitation section (Item #11). Enough topsoil will be retained to reclaim the remainder of the location at a future date. The remaining stockpile of topsoil will be seeded in place using the prescribed seed mixture.
- d. All above-ground production facilities will be painted a neutral color to be approved by the BLM.
- e. In the event of production, a new road will be constructed to BLM Class III road specifications to avoid continued use of the existing historic trail.

5. Location and Type of Water Supply

Water to be used for drilling this test will be hauled by tank truck from Neilson Pond near Bluff, Utah. A temporary use permit will be obtained from the Utah State Engineer, (801) 637-1303. Permission will also be received from the land owner or surface managing agency to use the land containing the water source.

6. Source of Construction Material

Construction material will be borrow material accumulated during construction. Surfacing material will not be placed on the access road or location without prior BLM approval.

7. Methods for Handling Waste Disposal

Three sides of the reserve pit will be fenced with four strands of barbed wire before and during drilling operations. (See Item #11 for fencing after drilling is completed.)

- a. Drill cuttings will be buried in the reserve pit.
- b. Drilling fluids will be handled in the reserve pit.
- c. Any produced fluids will be collected in a test tank.
- d. Sewage will be confined to a trench and buried.
- e. A trash pit will be constructed near the mud tanks with steep sides and dug at least six feet into solid undisturbed material. Before the rig moves onto the location, the pit will be totally enclosed with a fine mesh wire. A burning permit will be acquired from the State Fire Warden, John Baker (801) 587-2705, before burning any trash between May 1 and October 31.
- f. Immediately upon completion of drilling, the location and surrounding area will be cleared of all debris resulting from the operation. All trash will be disposed of in the trash pit. Non-burnable debris will be compacted and buried under a minimum of two feet of compacted soil.

8. Ancillary Facilities

No airstrip, camp or other facility will be necessary.

9. Well Site Layout

- a. Cross sections of the drill pad are shown on Attachment H.
- b. The drill pad area with reserve pit is shown on Attachment G.
- c. Rig orientation and access onto the pad is also illustrated on Attachment G.
- d. The reserve pit will be lined with commercial bentonite to prevent seepage, at the contractor's discretion. At least half of the pit capacity will be in cut material.

10. Plans for Construction of the Access Road and Drill Pad

- a. A Shell Oil Company agent or the dirt contractor will contact the BLM San Juan Resource Area Office in Monticello, Utah (801) 587-2201, 48 hours before beginning any work on public land.
- b. The dirt contractor will be given a copy of this Surface Use Plan and any additional BLM stipulations prior to any work.
- c. If subsurface cultural material is exposed during construction, work in that spot will stop immediately and the BLM San Juan Resource Area Office will be contacted. All employees working in the area will be informed that they will be subject to prosecution for disturbing archaeological sites or picking up artifacts. Salvage or excavation of identified archaeological sites will only be done if damage occurs.

- d. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
- e. The top 12 inches of soil material will be removed from the location and stockpiled separately from the trees on the northeast and east sides of the pad. Topsoil along the access road will be reserved in place.

11. Plans for Restoration of the Surface

- a. The fourth side of the reserve pit will be fenced as soon as the drilling is completed. The fence will be kept in good repair while the pit is drying.
- b. If there is any oil on the pits when drilling is completed, it will be removed immediately or the pits will be flagged overhead.
- c. Before any dirt work to restore the location takes place, the reserve pit will be dry.
- d. A Shell Oil Company agent or the dirt contractor will contact the BLM San Juan Resource Area Office in Monticello, Utah (801) 587-2201, 48 hours before starting rehabilitation work that involves earth-moving equipment and upon the completion of restoration measures.
- e. All disturbed areas will be recontoured to blend as nearly as possible with the natural topography. This includes removing all berms and refilling all cuts. The rehabilitated area will be irregular in shape to blend with the adjacent area.
- f. The stockpiled topsoil will be evenly distributed over the disturbed area.
- g. All disturbed areas will be scarified with the contour to a depth of 12 inches.
- h. Water bars will be built as follows to control erosion.

<u>Grade</u>	<u>Spacing</u>
2%	Every 200 feet
2-4%	Every 100 feet
4-5%	Every 75 feet
5+%	Every 50 feet

- i. Seed will be broadcast over the rehabilitated drill site and new access road at a time to be specified by the BLM with the following seed prescription. A harrow or similar implement will be dragged over the seeded area to assure seed cover.

2 lbs/acre Indian Ricegrass (Oryzopsis hymenoides)
 2 lbs/acre Fourwing saltbush (Antriplex canescens)
 2 lbs/acre Crested wheatgrass (Agropyron desertorum)
 1 lb/acre Globemallow (Sphaeralcea ambigua)
 1 lb/acre Big Sagebrush (Artemisia tridentata)

- j. After seeding is complete, the stockpiled trees will be scattered evenly over the disturbed areas. The new access will be blocked to prevent vehicular access.
- k. The existing trail will be rehabilitated and seeded according to the BLM Right-of-Way Stipulations.

12. Lessee's or Operator's Representative

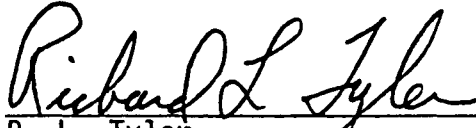
J. D. D'Agostino
 Shell Oil Company
 Rocky Mountain Division
 P. O. Box 831
 Houston, TX 77001
 Tel: (713) 870-2714

G. M. Jobe
 Shell Oil Company
 Rocky Mountain Division
 P. O. Box 831
 Houston, TX 77001
 Tel: (713) 870-3216

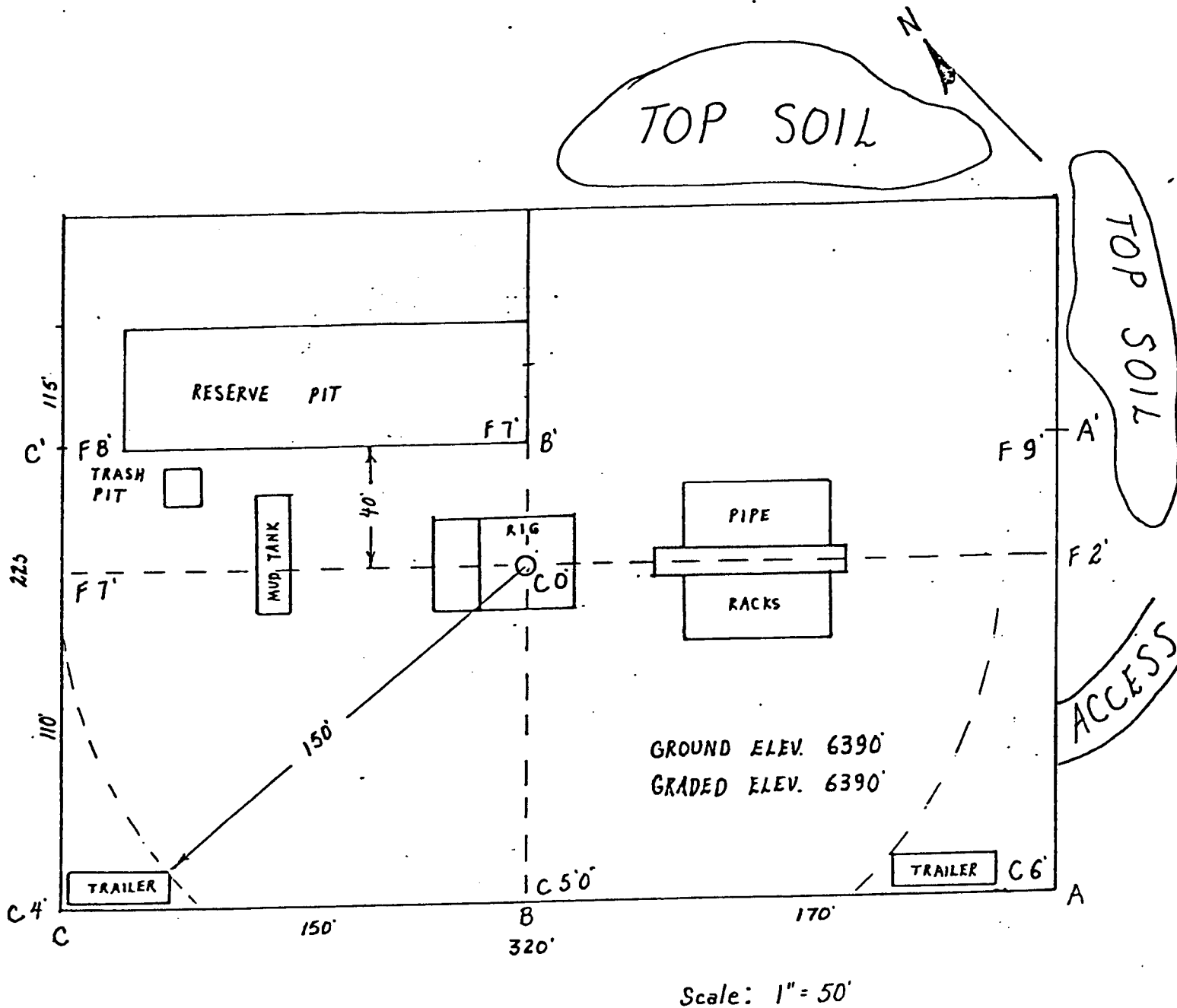
13. Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Shell Oil Company and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

Sept. 21, 1982
 DATE

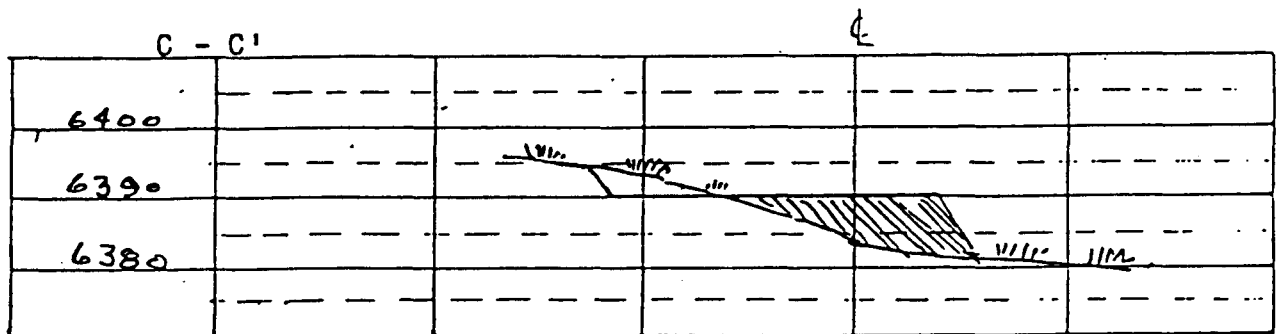
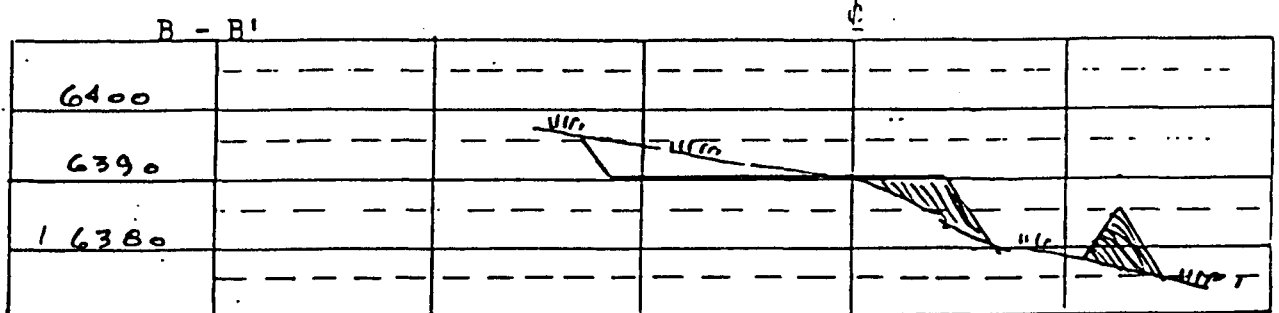
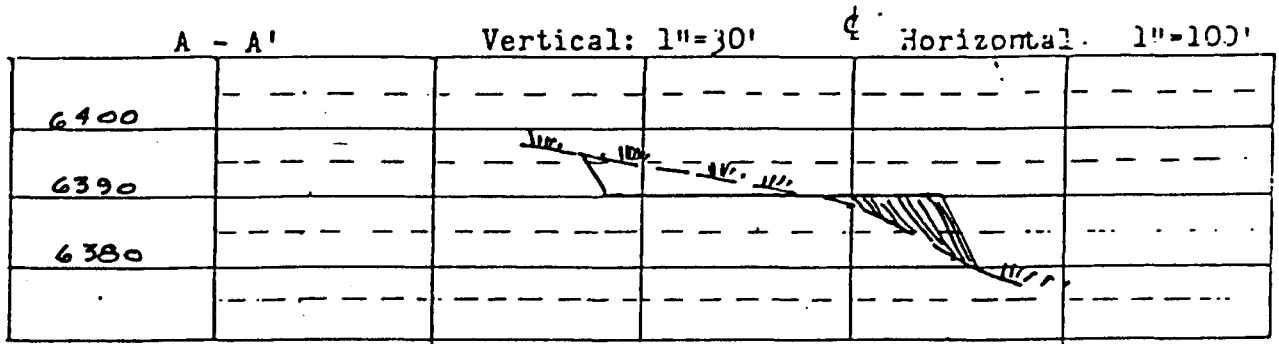

 R. L. Tyler
 Sr. Engineering Technician

USA 14-18
Section 18, T38S-R19E
San Juan County, Utah

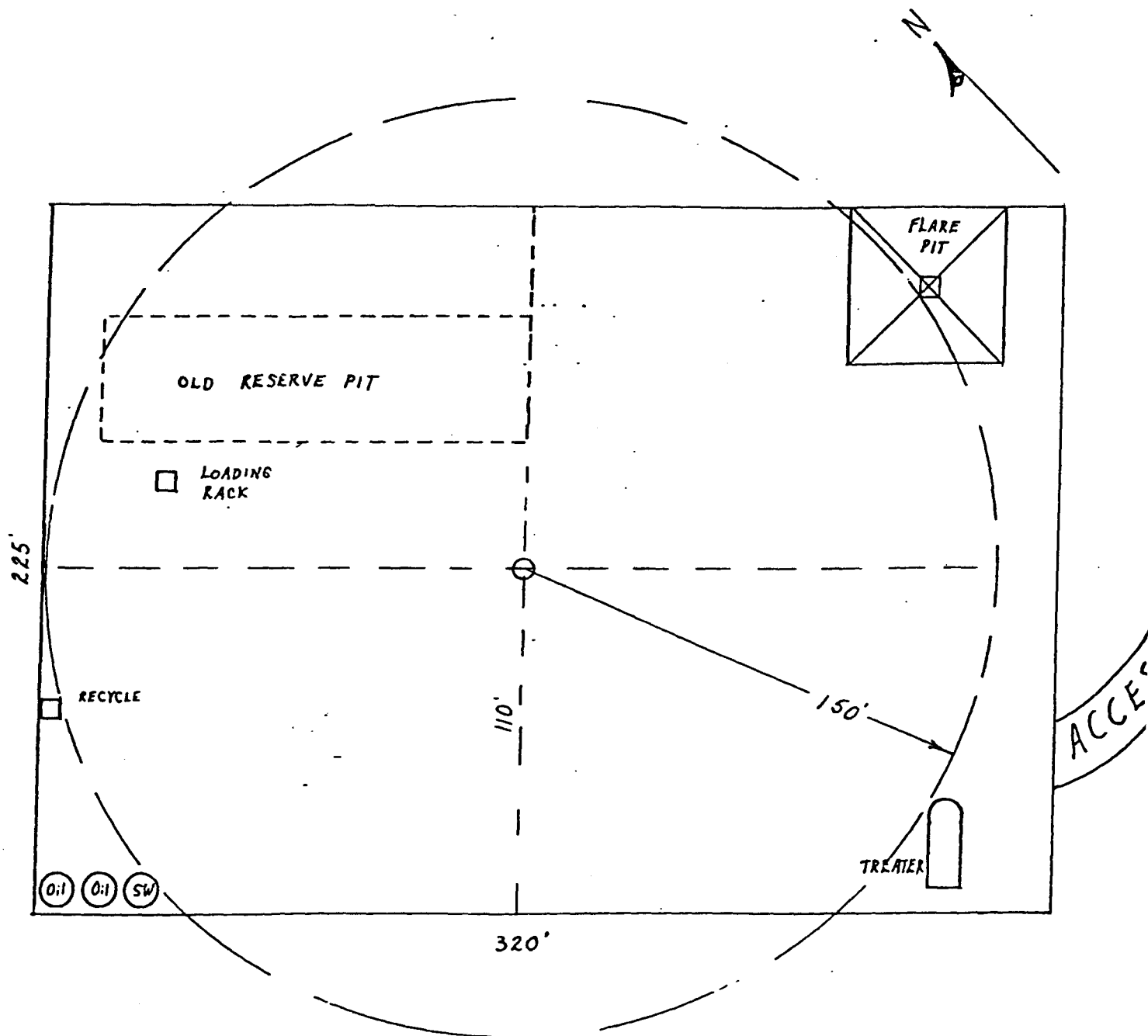


DRILL PAD LAYOUT

USA 14-18
 Section 18, T38S-R19E
 San Juan County, Utah



USA 14-18
Section 18, T38S-R19E
San Juan County, Utah



PRODUCTION FACILITIES LAYOUT

OPERATOR SHELL OIL DATE 11-17-82

WELL NAME USA 14-18

SEC SW SW 18 T 38S R 19E COUNTY SAN JUAN

43-037-30851
API NUMBER

FED
TYPE OF LEASE

POSTING CHECK OFF:

☐

INDEX

☒

HL

☐☐

NID

☒

PI

☐☒

MAP

☒☐

PROCESSING COMMENTS:

NO WELLS WITHIN 1000'

PSK ✓

APPROVAL LETTER:

SPACING:

☐

A-3

UNIT

☐

c-3-a

CAUSE NO. & DATE

☐

c-3-b

☒

c-3-c

SPECIAL LANGUAGE:

☒ RECONCILE WELL NAME AND LOCATION ON APD AGAINST SAME DATA ON PLAT MAP.

☒ AUTHENTICATE LEASE AND OPERATOR INFORMATION

☒ VERIFY ADEQUATE AND PROPER BONDING *FED*

☒ AUTHENTICATE IF SITE IS IN A NAMED FIELD, ETC.

☒ APPLY SPACING CONSIDERATION

☐ ORDER *ND*

☐ UNIT *ND*

☐ c-3-b

☒ c-3-c

☒ OUTSTANDING OR OVERDUE REPORTS FOR OTHER WELLS OF THE OPERATOR.

☒ IF POTASH DESIGNATED AREA, SPECIAL LANGUAGE ON APPROVAL LETTER

November 17, 1982

Shell Oil Company
P. O. Box 831
Houston, Texas 77001

RE: Well No. USA 14-18
SWSW Sec. 18, T.38S, R.19E
San Juan County, Utah

Dear Mr. Jobe:

Insofar as this office is concerned, approval to drill the above referred to oil well on said unorthodox location is hereby granted in accordance with Rule C-3(c), General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

RONALD J. FIRTH - Engineer
Office: 533-5771
Home: 571-6068

OR

CLEON B. FEIGHT - Director
Office: 533-5771
Home: 466-4455

Enclosed please find Form OGC-S-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-057-30851.

Sincerely,

Norman C. Stout
Administrative Assistant

NCS/as
cc: MMS
Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>			5. LEASE DESIGNATION AND SERIAL NO. U-29972	
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME SEP 24 1962	
2. NAME OF OPERATOR Shell Oil Company			7. UNIT AGREEMENT NAME SALT LAKE CITY, UTAH	
3. ADDRESS OF OPERATOR P. O. Box 831, Houston, Texas 77001 Attn. G. M. Jobe Rm 5468 WCK			8. FARM OR LEASE NAME USA	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface 280' FSL & 690' FWL of Section 18 At proposed prod. zone			9. WELL NO. 14-18	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 23 miles north of Mexican Hat, Utah			10. FIELD AND POOL, OR WILDCAT Wildcat	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)		280'	16. NO. OF ACRES IN LEASE 2549	17. NO. OF ACRES ASSIGNED TO THIS WELL 40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.		N/A	19. PROPOSED DEPTH 2450'	20. ROTARY OR CABLE TOOLS Rotary
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 6390' GR			22. APPROX. DATE WORK WILL START* Upon permit approval	

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT

SEE 10 POINT PLAN

ATTACHMENTS:

10 POINT PLAN - ATTACHMENT A
BOP EQUIPMENT - ATTACHMENT B
CHOKE MANIFOLD - ATTACHMENT C
SURFACE USE PLAN - ATTACHMENT D
SURVEY PLAT - ATTACHMENT E
VICINITY TOPO MAP - ATTACHMENT F
DRILL PAD LAYOUT - ATTACHMENT G
DRILL PAD CROSS SECTIONS - ATTACHMENT H
PRODUCTION FACILITIES LAYOUT - ATTACHMENT I
ARCHAEOLOGY REPORT FORWARDED TO MINERALS MANAGEMENT SERVICE & BLM UNDER
SEPARATE COVER

RECEIVED
DEC 06 1982

DIVISION OF
OIL, GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED S. M. Jobe TITLE Administrator DATE 9/21/82
Regulatory-Permits

(This space for Federal or State office use)

PERMIT NO. APPROVAL DATE
APPROVED BY [Signature] FOR E. W. GUYNN
CONDITIONS OF APPROVAL, IF ANY: TITLE DISTRICT OIL & GAS SUPERVISOR DATE DEC 3 1982

cc - BLM - Monticello, Utah
MMS - Durango, Colorado

CONDITIONS OF APPROVAL ATTACHED
TO OPERATOR'S COPY

FLARING OR VENTING OF
GAS IS SUBJECT TO NTL 4A
DATED 1/1/80

NOTICE OF APPROVAL

State Oil & Gas

COMPANY SHELL OIL COMPANY

LEASE USA

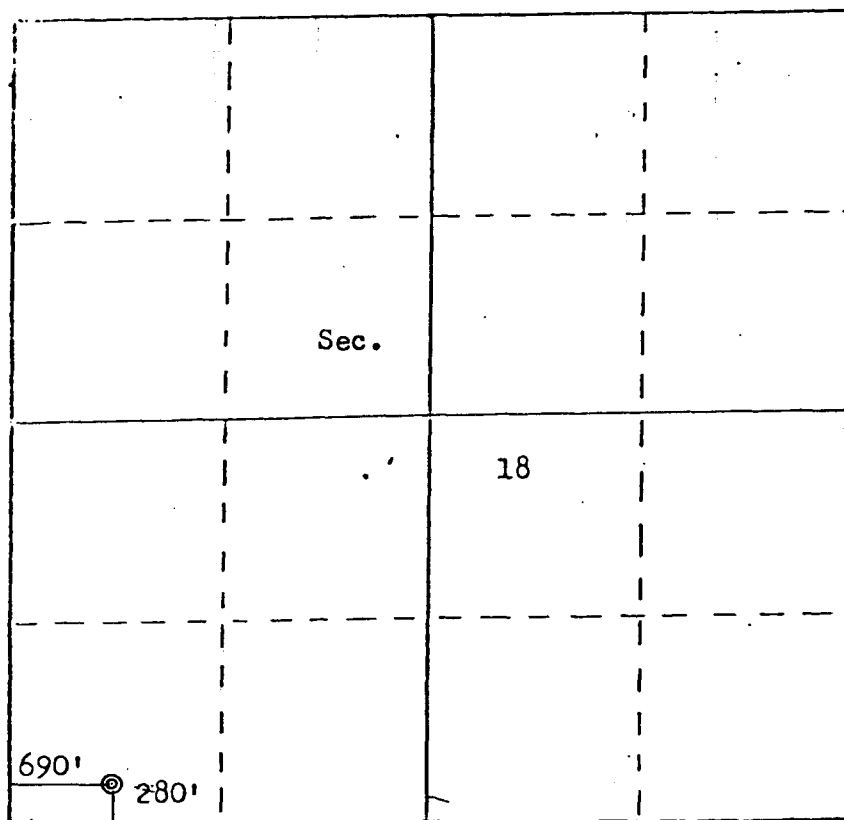
WELL NO. 14-18

SEC. 18, T 38S, R 19E

SAN JUAN COUNTY, UTAH

LOCATION 280' FSL 690' FWL

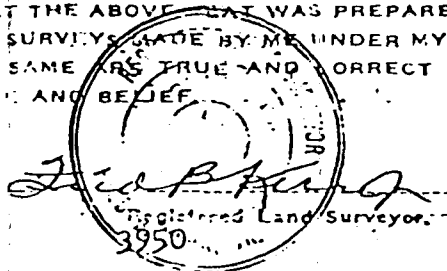
ELEVATION 6390 ungraded ground



SCALE—1 INCHES EQUALS 1 MILE

THIS IS TO CERTIFY THAT THE ABOVE MAP WAS PREPARED FROM
FIELD NOTE OF ACTUAL SURVEYS MADE BY ME UNDER MY SUPER-
VISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE AND BELIEF

SEAL:



SURVEYED September 16, 1982

Shell Oil Company
Well No. 14-18
Section 18-T38S-R19E
San Juan County, Utah
Lease No. U-29972

Supplemental Stipulations:

1. The operator will have an approved Right-of-Way from the BLM before any surface disturbance is allowed on the access road or on the location.

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

NAME OF COMPANY: Shell Oil

WELL NAME: USA 14-18

SECTION SWSW 18 TOWNSHIP 38S RANGE 19E COUNTY San Juan

DRILLING CONTRACTOR Drake Drilling

RIG # 18

SPUDDED: DATE 12-22-82

TIME 9:00 PM

How Rotary

DRILLING WILL COMMENCE _____

REPORTED BY Barbara

TELEPHONE # 713-870-3218

DATE 12-27-82 SIGNED AS

Shell Oil Company



P.O. Box 831
Houston, Texas 77001

December 27, 1982

State of Utah
Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, UT 84116

Gentlemen:

SHELL-USA 14-18
SECTION 18, T39S-R19E
SAN JUAN COUNTY, UTAH

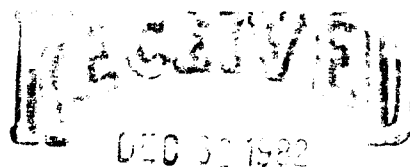
As follow-up to the telephone conversation between Arlene Sollis of your office and Barbara Bernard of our office on December 27, 1982 whereby you were given verbal notification of the spud date of subject well, this is written notification that USA 14-18 spudded December 22, 1982.

Yours very truly,

G. M. Jobe

G. M. Jobe
Administrator, Regulatory-Permits
Rocky Mountain Division

beb



DIVISION OF
OIL, GAS & MINING

ORAL APPROVAL TO PLUG AND ABANDON WELL

Operator Shell Oil Representative Ray Romago

Well No. USA 14-18 Location SW ¼ SW ¼ Section 18 Township 38S Range 19E

County San Juan Field Wildcat State Utah

Unit Name and
Required Depth _____ Base of fresh water sands _____

T.D. 2514' Size hole and
Fill per sack _____ " _____ Mud Weight
' and Top _____ #/gal. _____

Casing Size	Set At	Top of Cement	To Be Pulled	Plugging Requirements		
				From	To	Sacks Cement
<u>8 5/8</u>	<u>425'</u>	_____	_____	1. Set 200' plug across Desert Creek 2390'-2190'		
<u>13 3/8</u>	<u>120'</u>	_____	_____	2. Set 200' plug across casing shoe 525'- 325'		
<u>Formation</u>	<u>Top</u>	<u>Base</u>	<u>Shows</u>	10 sacks cement to surface		
<u>Desert Creek</u>	<u>2290'</u>	_____	_____	Heavy mud between plugs.		
<u>Hermosa</u>	<u>1165'</u>	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS

DST's, lost circulation zones, water zones, etc., _____

Approved by C. B. Feight Date 1-6-83 Time _____ a.m.
p.m.

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. U-29972
2. NAME OF OPERATOR Shell Oil Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR P. O. Box 831, Houston, TX 77001		7. UNIT AGREEMENT NAME
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 280' FSL & 690' FWL of Section 18		8. FARM OR LEASE NAME USA
14. PERMIT NO.		9. WELL NO. 14-18
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 6390' GR		10. FIELD AND POOL, OR WILDCAT Wildcat
		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA SW/4 SW/4 Section 18 T38S-R19E
		12. COUNTY OR PARISH San Juan
		13. STATE Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐FRACTURE TREAT ☐SHOOT OR ACIDIZE ☐REPAIR WELL ☐(Other) ☐PULL OR ALTER CASING ☐MULTIPLE COMPLETE ☐ABANDON* ☐CHANGE PLANS ☐

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐FRACTURE TREATMENT ☐SHOOTING OR ACIDIZING ☐(Other) ☐REPAIRING WELL ☐ALTERING CASING ☐ABANDONMENT* ☒

(NOTE: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Verbal approval to plug and abandon.

Plugs set as follows per attached:

Plug #1	2390-2190'	70 sx Class "H"
#2	525-325'	75 sx Class "H"
#3	Surface	10 sx Class "H"

Rig released at 5 PM, 1-6-83

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

DATE: 1-10-83BY: [Signature]

18. I hereby certify that the foregoing is true and correct

SIGNED S. M. Jorg

Administrator
TITLE Regulatory-Permits

DATE 1-7-83

(This space for Federal or State office use)

APPROVED BY _____

TITLE _____

DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Plug and Abandonment Procedures
Shell USA 14-18

8 5/8" 24# K55 @ 425' Surface
Cemented to Surface
7 7/8" hole drilled to 2514'

1. Trip in the hole open-ended with drill pipe.
2. Circulate mud, bottoms up.
3. Set the following plugs with Class "H" cement, 2½ to 3 hours estimated pumpability. Use a balanced plug method. Pump 10 bbls of fresh water for preflush and adequate fresh water behind to balance the plug.

±2205' - Desert Creek - ±200' of fill up across the formation, 60 sk minimum based on a 7 7/8" hole, verify formation tops with logs. Base of the plug at ±2305' and the top of the plug at ±2105'.

425' casing shoe - ±200' of fill, 60 sack minimum ½ in and ½ out of the casing shoe.

Surface - 10 sack plug

4. Use Caliper log to estimate hole size.
5. Cut the surface casing off approximately four feet below ground level. Weld on plate with well name and operator as marker.
6. Inform state of Utah Natural Resources and Energy, Oil Gas and Mining, and Minerals Management Service.

Phone numbers:

Ronald J. Firth - Engineer (Natural Resources and Energy)
Office - 801-533-5771
Home - 801-571-6068

A. M. Raffoul - Staff Engineer (M.M.S.)
Office - 801-524-4590
Home-801-484-2638

HAZ 1/5/83

Approved:

J. S. Aguirre
Drilling Superintendent 1/5/83

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

IN TRIPLICATE*
 or instructions on
 reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
 Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. U-29972
2. NAME OF OPERATOR Shell Oil Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR P. O. Box 831, Houston, TX 77001		7. UNIT AGREEMENT NAME
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 280' FSL & 690' FWL of Section 18		8. FARM OR LEASE NAME USA
14. PERMIT NO.		9. WELL NO. 14-18
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 6390' GR		10. FIELD AND POOL, OR WILDCAT Wildcat
16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data		11. SEC., T., R., M., OR BLE. AND SURVEY OR AREA SW/4 SW/4 Section 18 T38S-R10E
17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)* Spud on 12-22-82. Set 8-5/8" casing at 425' on 12-24-82. Present status: Coring at 2358'.		12. COUNTY OR PARISH 13. STATE San Juan Utah

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

☐

PULL OR ALTER CASING

☐

FRACTURE TREAT

☐

MULTIPLE COMPLETE

☐

SHOOT OR ACIDIZE

☐

ABANDON*

☐

REPAIR WELL

☐

CHANGE PLANS

☐

(Other) Monthly Well Status Report

☐

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

☐

REPAIRING WELL

☐

FRACTURE TREATMENT

☐

ALTERING CASING

☐

SHOOTING OR ACIDIZING

☐

ABANDONMENT*

☐

(Other)

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spud on 12-22-82. Set 8-5/8" casing at 425' on 12-24-82. Present status: Coring at 2358'.

DIVISION OF
OIL, GAS & MINING

JAN 10 1983

18. I hereby certify that the foregoing is true and correct

SIGNED

R. M. Gobe

TITLE

Administrator

Regulatory-Permits

DATE

1-4-83

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

**CORE LABORATORIES, INC.****Petroleum Reservoir Engineering**COMPANY SHELL OIL COMPANYFILE NO. RP-3-003248WELL SHELL USA 14-18DATE 1-02-83ENGRS. GG;DSFIELD WILDCATFORMATION DESERT CREEKELEV. 6399 KBCOUNTY SAN JUANSTATE UTAHDRLG. FLD. WBM

CORES _____

CoRes Log

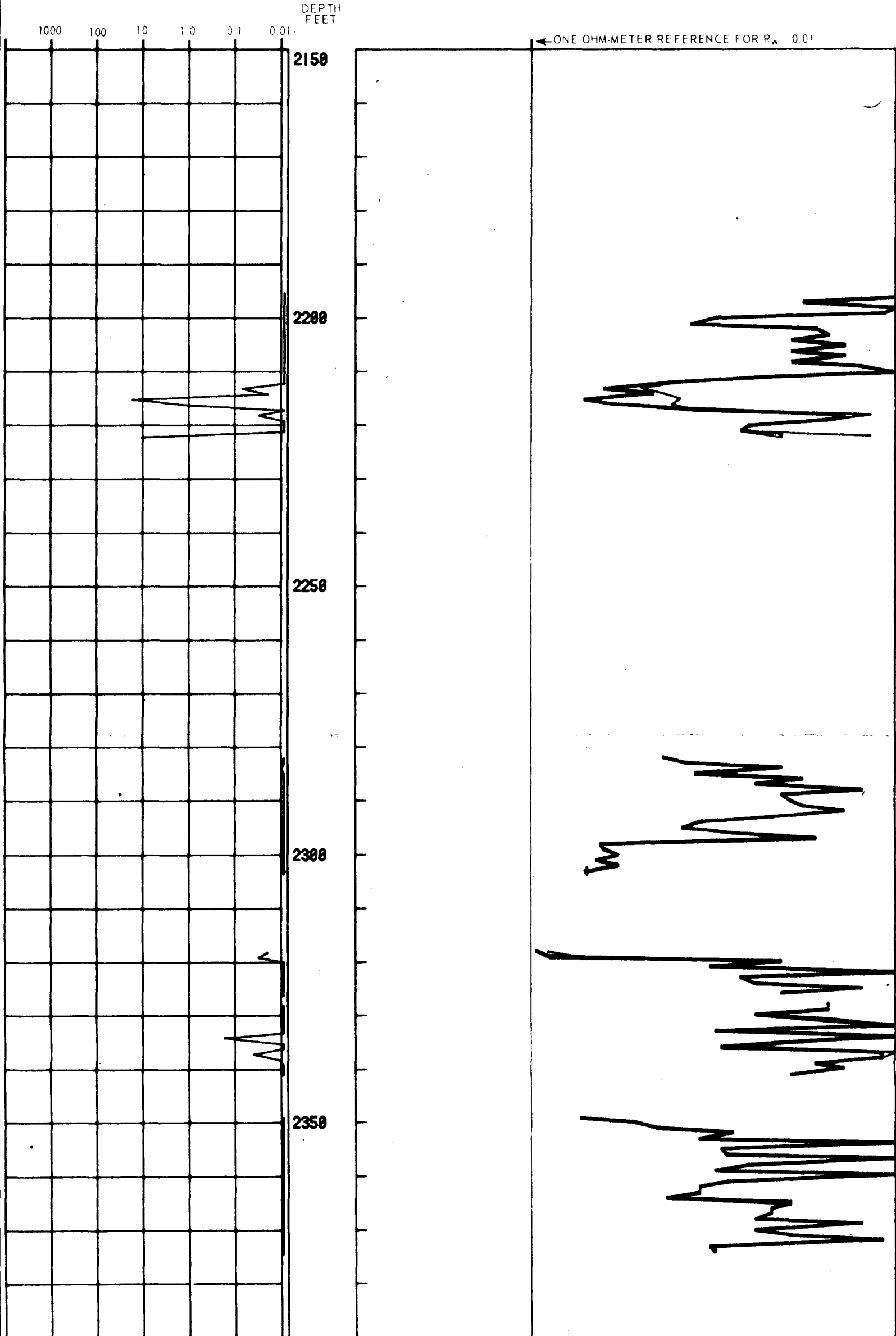
CORE and RESISTIVITY EVALUATION

These analyses, calculations, interpretations and recommendations are based on information supplied by the client and are subject to change without notice and without liability. The user of this report is responsible for the interpretation of the data and for the use of the results. The user is also responsible for the accuracy of the data and for the use of the results. The user is also responsible for the accuracy of the data and for the use of the results.

RESISTIVITY PARAMETERS: $a = 1.00$ $m = 2.00$ $n = 2.00$ Depths 2105.0 to 2375.0
 $a =$ $m =$ $n =$ Depths to

PERMEABILITY
MILLIDARCIES

CORE ANALYSIS CALCULATED RESISTIVITY

 $R_{100} =$ OHM-METERS AT 100% S_w _____ $R_{10} =$ OHM-METERS AT CRITICAL S_w _____

CORE LAB

CORE LABORATORIES, INC.

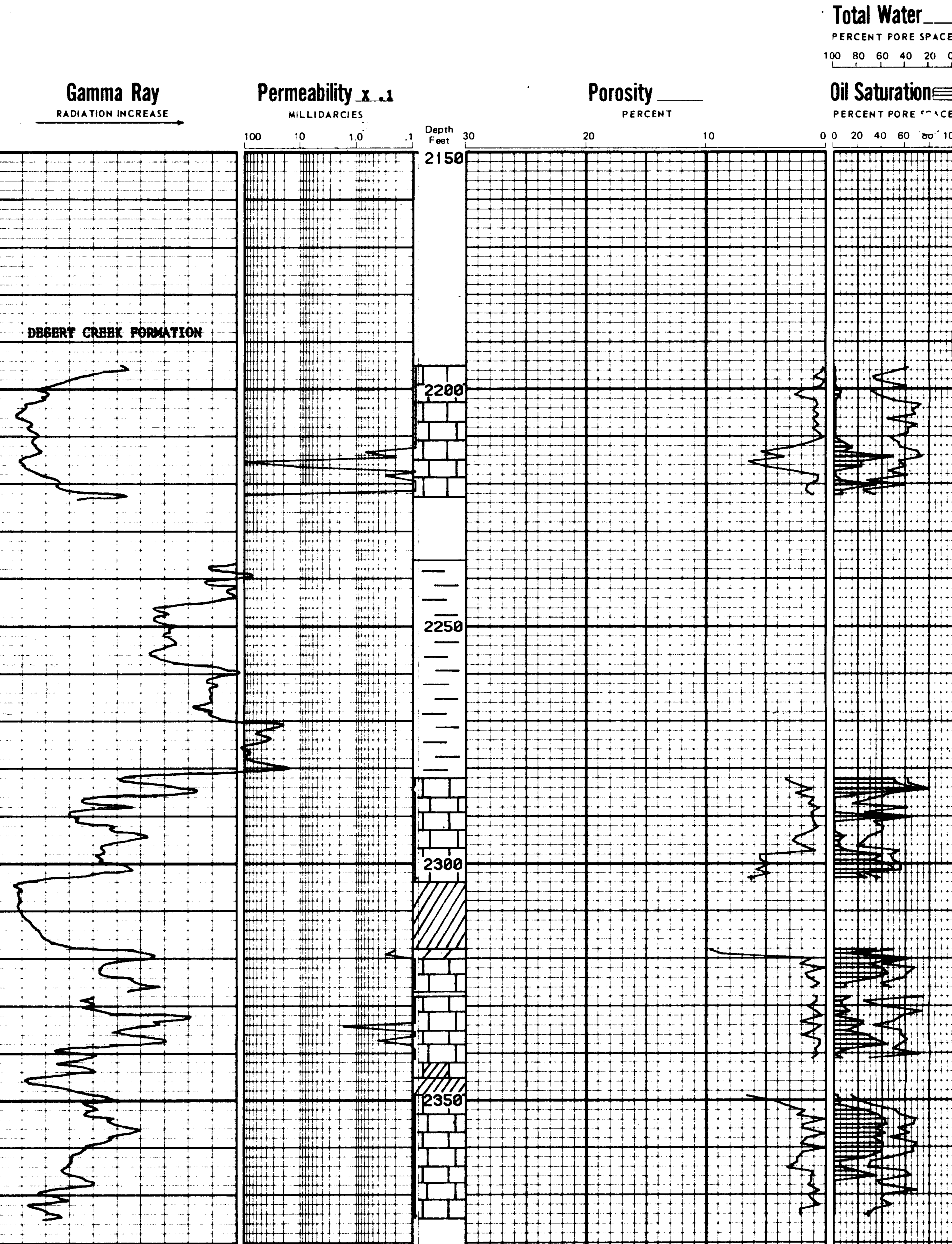
Petroleum Reservoir Engineering

COMPANY	SHELL OIL COMPANY	FILE NO.	RP-3-003248
WELL	SHELL USA 14-18	DATE	1-02-83
FIELD	WILDCAT	FORMATION	DESERT CREEK
COUNTY	SAN JUAN	STATE	UTAH
		DRLG. FLD.	WBM
LOCATION	SW, SW SEC. 18-38S-10E		
		ELEV.	8399 KB
		CORES	

CORRELATION COREGRAPH

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc., (all errors or omissions excepted); but Core Laboratories, Inc., and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

VERTICAL SCALE: 5" = 100'



STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN DUPLICATE*
 (See other instructions
 on reverse side)

56 64 01

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input checked="" type="checkbox"/> Other <input type="checkbox"/>						5. LEASE DESIGNATION AND SERIAL NO. U-29972	
b. TYPE OF COMPLETION: NEW WELL <input type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> Other <input type="checkbox"/>						6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR Shell Oil Company						7. UNIT AGREEMENT NAME	
3. ADDRESS OF OPERATOR P. O. Box 831, Houston, TX 77001						8. FARM OR LEASE NAME USA	
4. LOCATION OF WELL (Report location clearly and in accordance with <i>Oil, Gas & Mining</i> requirements) At surface 280' FSL & 690' FWL of Section 18 At top prod. interval reported below At total depth						9. WELL NO. 14-18	
10. FIELD AND POOL, OR WILDCAT Wildcat						11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA SW/4 SW/4 Section 18 T38S-R19E	
14. PERMIT NO. 43-037-30851				DATE ISSUED		12. COUNTY OR PARISH San Juan	
						13. STATE Utah	
15. DATE SPUDDED 12-22-82		16. DATE T.D. REACHED 1-4-83		17. DATE COMPL. (Ready to prod.) P&A 1-6-83		18. ELEVATIONS (DF, REB, RT, GR, ETC.)* 6390' GR	
19. ELEV. CASINGHEAD		20. TOTAL DEPTH, MD & TVD 2514		21. PLUG, BACK T.D., MD & TVD NA		22. IF MULTIPLE COMPL., HOW MANY*	
				23. INTERVALS DRILLED BY →		24. ROTARY TOOLS X	
				25. CABLE TOOLS		26. WAS DIRECTIONAL SURVEY MADE Yes	
27. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* NA - P&A						28. TYPE ELECTRIC AND OTHER LOGS RUN OLD/EDC/CNL/BHS	
29. CASING RECORD (Report all strings set in well)						27. WAS WELL CORED Yes	
CASING SIZE		WEIGHT, LB./FT.		DEPTH SET (MD)		HOLE SIZE	
13-3/8"				120'			
8-5/8"				425'		225 sx Class "H"	
29. LINER RECORD				30. TUBING RECORD			
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A							
31. PERFORATION RECORD (Interval, size and number) N/A				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
				DEPTH INTERVAL (MD)		AMOUNT AND KIND OF MATERIAL USED	
33.* PRODUCTION							
DATE FIRST PRODUCTION P&A		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) P&A				WELL STATUS (Producing or shut-in) P&A	
DATE OF TEST	HOURS TESTED	CHOKER SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)						TEST WITNESSED BY	
35. LIST OF ATTACHMENTS Drilling History							
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records							
SIGNED <u>S. M. Jobs</u>		TITLE <u>Administrator</u>			DATE <u>1-10-83</u>		

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF: CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES				38. GEOLOGIC MARKERS		
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
			Core #1 2195-2236', Cut 41', rec. 28'	Cedar Mesa	Surface	
			Core #2 2236-2290', Cut & rec. 54'	Halgaito	782	
			Core #3 2290-2328', Cut 38', rec. 37'	Hermosa	1182	
			Core #4 2328-2375', Cut & rec. 47'	P-50 Shale	2238	
			No DST.	Desert Creek	2310	
				P-40 Shale	2396	
				Pre-Desert Crk	2426	
				Salt	2460	
				TD	2506	

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1588 West North Temple
Salt Lake City, Utah 84116

RECEIVED
FEB 03 1993

DIVISION OF
OIL GAS & MINING

REPORT OF WATER ENCOUNTERED DURING DRILLING

Well Name & Number SHELL USA 14-18
Operator SHELL OIL COMPANY Address P.O. BOX 831
HOUSTON, TX. 77001
Contractor DRAKE WELL SERVICE Address P.O. BOX 1846
FARMINGTON, NM 87401
Location SW 1/4 SW 1/4 Sec. 18 T. 38S R. 19E County SAN JUAN

Water Sands

<u>Depth</u>		<u>Volume</u>	<u>Quality</u>
From	To	Flow Rate or Head	Fresh or Salty
1.			
2.		NONE ENCOUNTERED	
3.			
4.			
5.			

(Continue of reverse side if necessary)

Formation Tops

DESERT CREEK - 2290'

REMAINDER AVAILABLE FROM HOUSTON OFFICE.

Remarks

- NOTE: (a) Report on this form as provided for in Rule C-20, General Rules and Regulations and Rules of Practice and Procedure.
- (b) If a water analysis has been made of the above reported zone, please forward a copy along with this form.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS REPORT

FOR

SHELL OIL COMPANY

SHELL USA 14-18
WILDCAT
SAN JUAN, UTAH

RECEIVED
FEB 14 1983

DIVISION OF
OIL GAS & MINING

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

PAGE NO. 1

SHELL OIL COMPANY

SHELL USA 14-18	FORMATION : DESERT CREEK	DATE : 1-02-83
WILDCAT	DRLG. FLUID: WBM	FILE NO. : RP-3-003248
SAN JUAN COUNTY	LOCATION : SW,SW SEC.18-38S-19E	ANALYSTS : GG:DS
	STATE : UTAH	ELEVATION: 6399 KB

CONVENTIONAL CORE ANALYSIS - BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO HORZ.	AIR (MD) VERTICAL	POR. B.L.	FLUID OIL	SATS. WATER	GR. DNS.	DESCRIPTION
1	2195-96	<0.01		0.3	0.0	38.5	2.70	LM GRY VFXLN
2	2196-97	<0.01		0.4	0.0	51.2		LM GRY VFXLN
3	2197-98	<0.01		1.0	0.0	67.7		LM GRY VFXLN
4	2198-99	<0.01		0.2	0.0	64.3	2.72	LM GRY VFXLN
5	2199 -0	<0.01		0.5	0.0	39.8		LM GRY VFXLN STY CVF
6	2200 -1	<0.01		2.1	5.0	70.4		LM GRY VFXLN STY CVF
7	2201 -2	<0.01		2.6	4.0	64.7	2.72	LM GRY VFXLN STY CVF
8	2202 -3	<0.01		0.9	0.0	50.4		LM GRY VFXLN STY
9	2203 -4	<0.01		0.8	0.0	28.6		LM GRY VFXLN OVF
10	2204 -5	<0.01		1.1	0.0	35.0	2.73	LM GRY VFXLN OVF
11	2205 -6	<0.01		0.7	0.0	33.2		LM GRY VFXLN STY OVF
12	2206 -7	<0.01		1.1	0.0	56.5		LM GRY VFXLN OVF
13	2207 -8	<0.01		0.7	0.0	31.6	2.72	LM GRY VFXLN OVF
14	2208 -9	<0.01		1.1	0.0	38.3		LM GRY VFXLN STY OVF
15	2209-10	<0.01		0.6	0.0	39.2		LM GRY VFXLN OVF
16	2210-11	<0.01		0.3	0.0	54.1	2.72	LM GRY VFXLN STY OVF
17	2211-12	<0.01		1.4	7.8	46.9		LM GRY VFXLN STY OVF
18	2212-13	<0.01		3.0	14.3	44.9	2.69	LM BRN/GRY VFXLN PP-VUG OVF
19	2213-14	0.07		5.5	7.8	31.0	2.71	LM BRN/GRY VFXLN PP-VUG OVF
20	2214-15	0.02		3.6	49.1	27.3	2.71	LM BRN/GRY VFXLN PP-VUG OVF
21	2215-16	17		6.5	22.7	45.5	2.69	LM BRN VFXLN PP-VUG OVF
22	2216-17	0.96		5.1	22.4	39.8	2.69	LM BRN VFXLN PP-VUG OVF
23	2217-18	<0.01		2.5	0.0	54.7	2.72	LM GRY VFXLN SL/PP-VUG
24	2218-19	0.03		0.7	0.0	39.4	2.72	LM GRY VFXLN OVF
25	2219-20	<0.01		0.8	6.1	73.1	2.77	LM GRY VFXLN OVF

CVF = CLOSED VERTICAL FRACTURE OVF = OPEN VERTICAL FRACTURE

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

PAGE NO. 2

SHELL OIL COMPANY

SHELL USA 14-18
 WILDCAT
 SAN JUAN COUNTY

FORMATION : DESERT CREEK
 DRG. FLUID: WBM
 LOCATION : SW,SW SEC.18-38S-19E
 STATE : UTAH

DATE : 1-02-83
 FILE NO. : RP-3-003248
 ANALYSTS : GG:DS
 ELEVATION: 6399 KB

CONVENTIONAL CORE ANALYSIS - BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ. VERTICAL	POR. B.L.	FLUID SATS. OIL WATER	GR. DNS.	DESCRIPTION
26	2220-21	<0.01	1.6	34.3 41.1		LM GRY VFXLN SL/SHL OVF
27	2221-22	<0.01	1.7	6.3 75.7		LM GRY VFXLN SL/SHL OVF
28	2222-23	11	1.2	6.7 66.7	2.66	LM GRY VFXLN SL/SHL OVF
	2223-2236					CORE LOSS
	2236-2282					SHALE/CALC - NO ANALYSIS
29	2282-83	<0.01	3.3	50.9 38.2		LM GRY VFXLN SL/SHL
30	2283-84	<0.01	2.7	53.1 37.9		LM GRY VFXLN SL/SHL
31	2284-85	0.01	1.2	72.1 20.6	2.63	LM GRY VFXLN SL/SHL
32	2285-86	<0.01	2.5	30.0 51.5		LM GRY VFXLN
33	2286-87	<0.01	1.0	0.0 66.4		LM GRY VFXLN
34	2287-88	<0.01	1.5	0.0 84.7	2.71	LM GRY VFXLN
35	2288-89	<0.01	0.6	0.0 39.0		LM GRY VFXLN
36	2289-90	<0.01	1.2	0.0 74.2		LM GRY VFXLN
37	2290-91	<0.01	1.1	50.7 33.8	2.71	LM GRY VFXLN
38	2291-92	<0.01	1.0	0.0 67.2		LM GRY VFXLN
39	2292-93	<0.01	0.7	0.0 59.0		LM GRY VFXLN
40	2293-94	<0.01	1.3	0.0 59.8	2.71	LM GRY VFXLN
41	2294-95	<0.01	2.4	9.0 71.6		LM GRY VFXLN
42	2295-96	<0.01	2.8	3.7 74.6		LM GRY VFXLN
43	2296-97	<0.01	1.8	4.0 80.5	2.73	LM GRY VFXLN
44	2297-98	<0.01	0.9	11.5 45.8		LM GRY VFXLN
45	2298-99	<0.01	5.6	39.6 52.8		LM GRY VFXLN
46	2299 -0	<0.01	5.5	32.4 51.0	2.74	LM GRY VFXLN
47	2300 -1	<0.01	4.8	45.6 43.4		LM GRY VFXLN SL/DOL
48	2301 -2	<0.01	5.8	50.7 43.5		LM GRY VFXLN SL/DOL

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

PAGE NO. 3

SHELL OIL COMPANY

SHELL USA 14-18
WILDCAT
SAN JUAN COUNTY

FORMATION : DESERT CREEK
DRLG. FLUID: WBM
LOCATION : SW,SW SEC.18-38S-19E
STATE : UTAH

DATE : 1-02-83
FILE NO. : RP-3-003248
ANALYSTS : GG:DS
ELEVATION: 6399 KB

CONVENTIONAL CORE ANALYSIS - BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ. VERTICAL	POR. B.L.	FLUID OIL	SATS. WATER	GR. DMS.	DESCRIPTION
49	2302 -3	<0.01	4.8	18.5	73.9	2.76	LM GRY VFXLN SL/DOL
50	2303 -4	<0.01	6.3	27.0	64.2		LM GRY VFXLN SL/ANHY SL/DOL
	2304-2318						ANHYDRITE - NO ANALYSIS
51	2318-19	0.02	9.7	33.8	50.6		DOL BRN VFXLN CALC SL/ANHY
52	2319-20	0.03	8.6	10.9	83.0	2.77	DOL BRN VFXLN CALC
53	2320-21	<0.01	1.2	52.8	35.2		LM GRY VFXLN SL/DOL
54	2321-22	<0.01	2.2	29.3	58.6		LM GRY VFXLN SL/DOL
55	2322-23	<0.01	0.2	40.7	32.6	2.70	LM GRY VFXLN
56	2323-24	<0.01	1.7	45.4	38.9		LM GRY VFXLN
57	2324-25	<0.01	1.5	34.8	41.7		LM GRY VFXLN
58	2325-26	<0.01	0.6	10.1	60.8	2.71	LM GRY VFXLN
59	2326-27	<0.01	1.2	8.8	52.9		LM GRY VFXLN
	2327-2328						CORE LOSS
60	2328-29	<0.01	0.8	12.8	25.6		LM GRY VFXLN
61	2329-30	<0.01	0.8	6.2	74.7	2.71	LM GRY VFXLN
62	2330-31	<0.01	1.5	7.3	58.4		LM GRY VFXLN
63	2331-32	<0.01	0.8	12.8	25.7		LM GRY VFXLN
64	2332-33	<0.01	0.3	0.0	42.6	2.76	LM GRY VFXLN
65	2333-34	<0.01	2.1	25.1	50.2		LM GRY VFXLN
66	2334-35	0.17	0.4	21.4	67.2	2.70	LM GRY VFXLN
67	2335-36	<0.01	1.0	10.9	43.7		LM GRY VFXLN
68	2336-37	<0.01	2.0	27.3	43.7		LM GRY VFXLN
69	2337-38	0.04	0.5	34.3	39.1	2.69	LM GRY VFXLN SL/SHL
70	2338-39	0.01	0.5	44.5	44.5	2.68	LM GRY VFXLN SL/SHL
71	2339-40	<0.01	0.9	12.6	50.3		LM GRY VFXLN SL/ANHY

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

PAGE NO. 4

SHELL OIL COMPANY

SHELL USA 14-18
WILDCAT
SAN JUAN COUNTY

FORMATION : DESERT CREEK
DRLG. FLUID: WBM
LOCATION : SW,SW SEC.18-38S-19E
STATE : UTAH

DATE : 1-02-83
FILE NO. : RP-3-003248
ANALYSTS : GG:DS
ELEVATION: 6399 KB

CONVENTIONAL CORE ANALYSIS - BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ. VERTICAL	POR. B.L.	FLUID SATS. OIL WATER	GR. DNS.	DESCRIPTION
72	2340-41	<0.01	0.7	0.0 27.9		LM GRY VFXLN SL/ANHY
73	2341-42	<0.01	1.1	7.8 70.5	2.74	LM GRY VFXLN SL/ANHY
	2342-2343					ANHYDRITE - NO ANALYSIS
	2343-2345					LM/ANHY - NO ANALYSIS
	2345-2349					ANHYDRITE - NO ANALYSIS
74	2349-50	<0.01	6.6	2.8 85.4	2.75	LM GRY VFXLN SL/DOL
75	2350-51	<0.01	4.2	5.6 78.6	2.75	LM GRY VFXLN SL/DOL
76	2351-52	<0.01	3.4	4.3 68.8	2.75	LM GRY VFXLN SL/DOL
77	2352-53	<0.01	1.8	27.4 47.6		LM GRY VFXLN SL/DOL
78	2353-54	<0.01	2.4	36.1 45.1		LM GRY VFXLN
79	2354-55	<0.01	0.1	42.2 31.7	2.73	LM GRY VFXLN
80	2355-56	<0.01	2.0	44.0 33.0		LM GRY VFXLN
81	2356-57	<0.01	1.9	34.7 46.2		LM GRY VFXLN
82	2357-58	<0.01	0.1	43.0 36.9	2.69	LM GRY VFXLN FOSS
83	2358-59	<0.01	1.6	32.7 52.3		LM GRY VFXLN FOSS
84	2359-60	<0.01	2.1	40.8 30.6		LM GRY VFXLN FOSS
85	2360-61	<0.01	0.1	40.0 34.3	2.69	LM GRY VFXLN FOSS
86	2361-62	<0.01	1.9	39.0 33.4		LM GRY VFXLN FOSS
87	2362-63	<0.01	2.4	26.6 53.2		LM GRY VFXLN FOSS
88	2363-64	<0.01	2.4	5.0 69.7	2.72	LM GRY VFXLN FOSS
89	2364-65	<0.01	3.2	6.5 71.9		LM GRY VFXLN
90	2365-66	<0.01	1.1	19.8 39.6		LM GRY VFXLN
91	2366-67	<0.01	1.3	35.9 35.9	2.74	LM GRY VFXLN
92	2367-68	<0.01	1.3	0.0 64.8		LM GRY VFXLN SL/FOSS
93	2368-69	<0.01	1.5	0.0 59.5		LM GRY VFXLN SL/FOSS

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

PAGE NO. 5

SHELL OIL COMPANY

SHELL USA 14-18	FORMATION : DESERT CREEK	DATE : 1-02-83
	DRLG. FLUID: WBM	FILE NO. : RP-3-003248
WILDCAT	LOCATION : SW,SW SEC.18-38S-19E	ANALYSTS : GG:DS
SAN JUAN COUNTY	STATE : UTAH	ELEVATION: 6399 KB

CONVENTIONAL CORE ANALYSIS - BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD)		POR. B.L.	FLUID SATS.		GR. DNS.	DESCRIPTION
		HORZ.	VERTICAL		OIL	WATER		
94	2369-70	<0.01		0.6	0.0	30.8	2.72	LM GRY VFXLN SL/FOSS
95	2370-71	<0.01		1.5	0.0	58.0		LM GRY VFXLN SL/FOSS
96	2371-72	<0.01		1.1	0.0	60.6		LM GRY VFXLN
97	2372-73	<0.01		0.5	0.0	52.2	2.72	LM GRY VFXLN
98	2373-74	<0.01		2.2	0.0	67.1		LM GRY VFXLN
99	2374-75	<0.01		2.1	0.0	71.7		LM GRY VFXLN

CVF = CLOSED VERTICAL FRACTURE OVf = OPEN VERTICAL FRACTURE

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

SHELL OIL COMPANY
SHELL USA 14-18

DATE : 1-02-83
FORMATION : DESERT CREEK

FILE NO. : RP-3-003248
ANALYSTS : GG/DS

*** CORE SUMMARY AVERAGES FOR 1 ZONE ***

DEPTH INTERVAL: 2195.0 TO 2375.0

FEET OF CORE ANALYZED : 99.0 FEET OF CORE INCLUDED IN AVERAGES: 99.0

-- SAMPLES FALLING WITHIN THE FOLLOWING RANGES WERE AVERAGED --

PERMEABILITY HORIZONTAL RANGE (MD.)	:	0.00 TO 18.	(UNCORRECTED FOR SLIPPAGE)
HELIUM POROSITY RANGE (%)	:	0.0 TO 100.0	
OIL SATURATION RANGE (%)	:	0.0 TO 73.0	
WATER SATURATION RANGE (%)	:	20.0 TO 86.0	

SHALE SAMPLES EXCLUDED FROM AVERAGES.

AVERAGES FOR DEPTH INTERVAL: 2195.0 TO 2375.0

AVERAGE PERMEABILITY (MILLIDARCIES)		PRODUCTIVE CAPACITY (MILLIDARCY-FEET)	
ARITHMETIC PERMEABILITY	: 0.30	ARITHMETIC CAPACITY	: 30.
GEOMETRIC PERMEABILITY	: 0.01	GEOMETRIC CAPACITY	: 1.2
HARMONIC PERMEABILITY	: 0.01	HARMONIC CAPACITY	: 0.97
AVERAGE POROSITY (PERCENT)	: 2.0	AVERAGE TOTAL WATER SATURATION (PERCENT OF PORE SPACE)	: 54.6
AVERAGE RESIDUAL OIL SATURATION (PERCENT OF PORE SPACE)	: 20.6		

=====

INTERPRETATION OF DATA

INTERVAL 2195.0 - 2375.0 NON-PRODUCTIVE WHERE ANALYZED DUE TO LOW PERMEABILITY

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PERMEABILITY VS POROSITY

COMPANY: SHELL OIL COMPANY
FIELD : WILDCAT

WELL : SHELL USA 14-18
COUNTY, STATE: SAN JUAN, UTAH

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY MINIMUM MAXIMUM	POROSITY MIN. MAX.	POROSITY AVERAGE	PERMEABILITY AVERAGES ARITHMETIC HARMONIC GEOMETRIC
2195.0 - 2375.0	1 (+)	0.000 18.0	0.0 9.8	2.0	0.30 0.01 0.01

100.

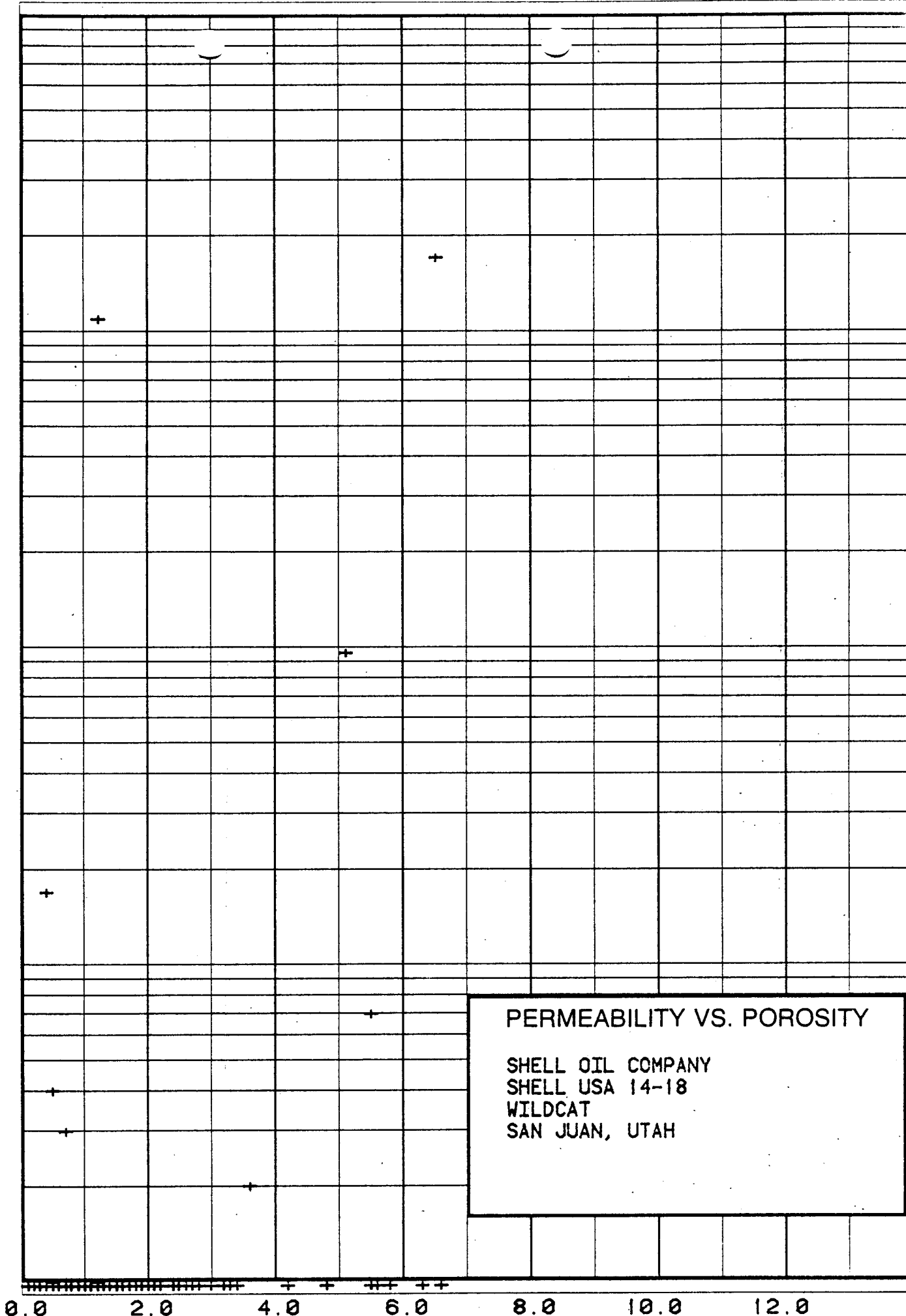
PERMEABILITY: MILLIDARCIES

10.

1.

0.1

0.01



PERMEABILITY VS. POROSITY

SHELL OIL COMPANY
SHELL USA 14-18
WILDCAT
SAN JUAN, UTAH

0.0

2.0

4.0

6.0

8.0

10.0

12.0

POROSITY: PERCENT

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: SHELL OIL COMPANY
FIELD : WILDCAT

WELL : SHELL USA 14-18
COUNTY, STATE: SAN JUAN, UTAH

AIR PERMEABILITY : MD. (HORIZONTAL) RANGE USED 0.000 TO 18.
POROSITY : PERCENT (HELIUM) RANGE USED 0.0 TO 46.0

(PERMEABILITY UNCORRECTED FOR SLIPPAGE)

DEPTH LIMITS : 2195.0 - 2375.0 INTERVAL LENGTH : 180.0
FEET ANALYZED IN ZONE : 99.0 LITHOLOGY EXCLUDED : NONE

DATA SUMMARY

POROSITY AVERAGE	PERMEABILITY AVERAGES		
	ARITHMETIC	HARMONIC	GEOMETRIC
2.0	0.30	0.01	0.01

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

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STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: SHELL OIL COMPANY
FIELD : WILDCAT

WELL : SHELL USA 14-18
COUNTY, STATE: SAN JUAN, UTAH

GROUPING BY POROSITY RANGES

POROSITY RANGE	FEET IN RANGE	AVERAGE POROSITY	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.0 - 2.0	64.0	1.0	0.011	0.184	64.6	64.6
2.0 - 4.0	22.0	2.5	0.009	0.010	22.2	86.9
4.0 - 6.0	8.0	5.2	0.021	0.135	8.1	94.9
6.0 - 8.0	3.0	6.5	0.111	5.7	3.0	98.0
8.0 - 10.0	2.0	9.2	0.024	0.025	2.0	100.0

TOTAL NUMBER OF FEET = 99.0

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: SHELL OIL COMPANY
FIELD : WILDCAT

WELL : SHELL USA 14-18
COUNTY, STATE: SAN JUAN, UTAH

GROUPING BY PERMEABILITY RANGES

PERMEABILITY RANGE	FEET IN RANGE	AVERAGE PERM. (GEOM.)	PERM. (ARITH)	AVERAGE POROSITY	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.005 - 0.010	87.0	0.009	0.009	1.8	87.9	87.9
0.010 - 0.020	2.0	0.010	0.010	0.9	2.0	89.9
0.020 - 0.039	4.0	0.024	0.025	5.7	4.0	93.9
0.039 - 0.078	2.0	0.053	0.055	3.0	2.0	96.0
0.156 - 0.312	1.0	0.170	0.170	0.4	1.0	97.0
0.625 - 1.250	1.0	0.960	0.960	5.1	1.0	98.0
10.- 20.	2.0	14.	14.	3.9	2.0	100.0

TOTAL NUMBER OF FEET = 99.0

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: SHELL OIL COMPANY
FIELD : WILDCAT

WELL : SHELL USA 14-18
COUNTY, STATE: SAN JUAN, UTAH

POROSITY-FEET OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

POROSITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	ARITH MEAN	MEDIAN
0.0	0.0	0.0	99.0	100.0	2.0	
2.0	64.0	31.3	35.0	68.7	3.9	
4.0	86.0	59.8	13.0	40.2	6.1	
6.0	94.0	80.8	5.0	19.2	7.5	
8.0	97.0	90.7	2.0	9.3	9.2	
10.0	99.0	100.0	0.0	0.0		

TOTAL STORAGE CAPACITY IN POROSITY-FEET = 196.5

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

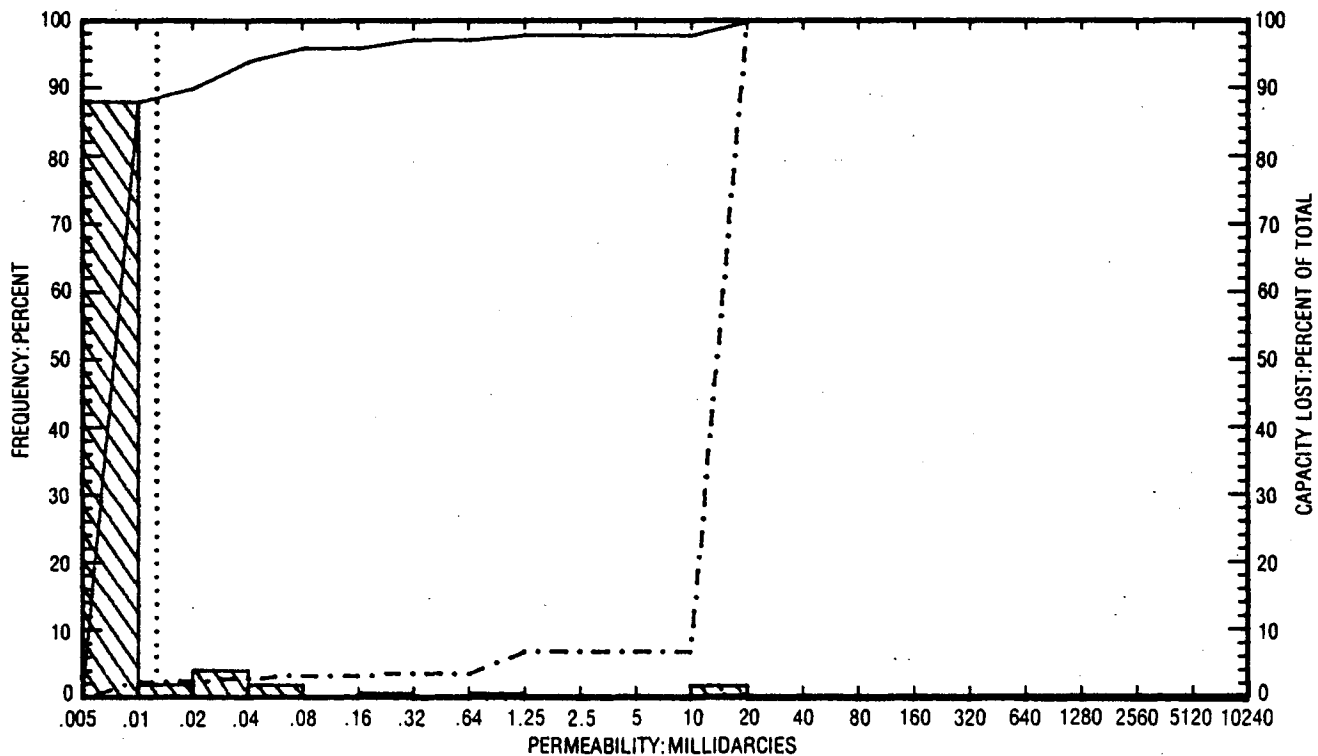
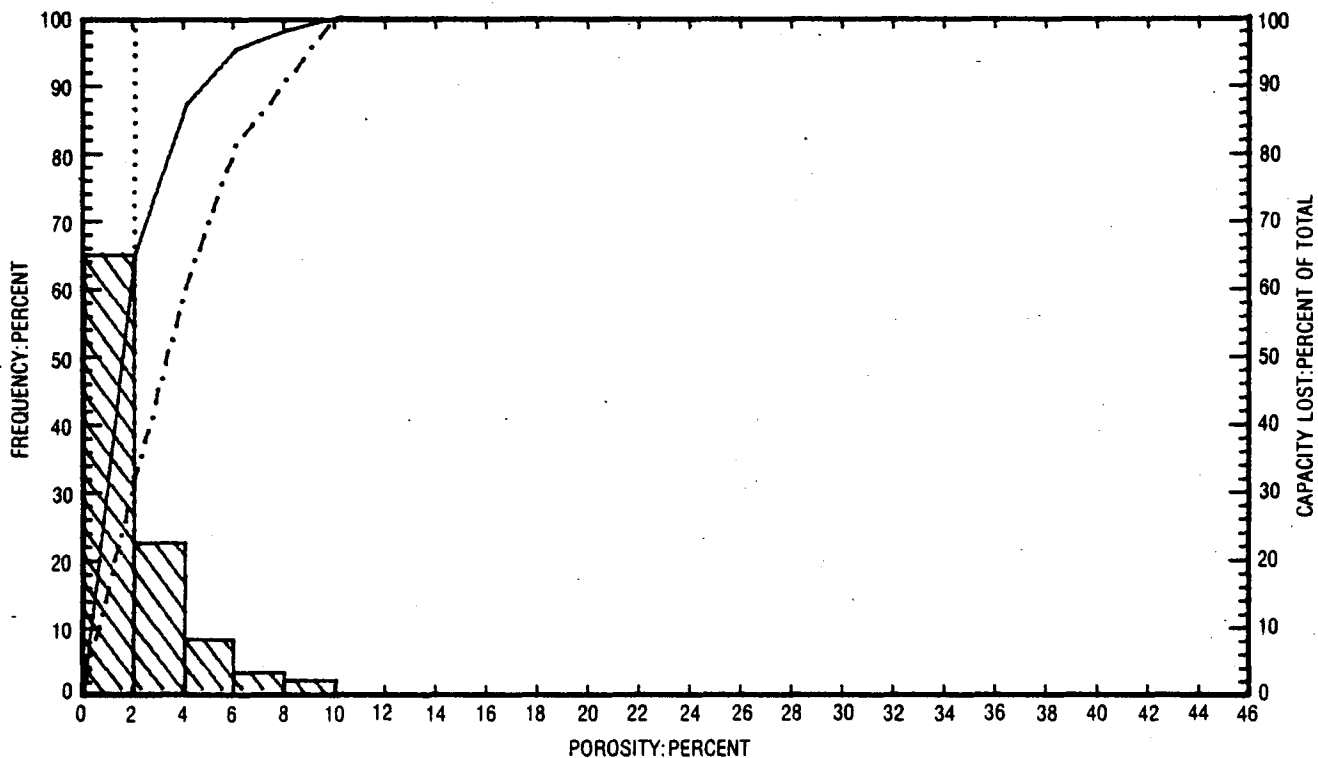
COMPANY: SHELL OIL COMPANY
FIELD : WILDCAT

WELL : SHELL USA 14-18
COUNTY, STATE: SAN JUAN, UTAH

MILLIDARCY-FEET OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

PERMEABILITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	GEOM MEAN	MEDIAN
0.005	0.0	0.0	99.0	100.0	0.01	
0.010	87.0	2.6	12.0	97.4	0.11	0.04
0.020	89.0	2.7	10.0	97.3	0.18	0.06
0.039	93.0	3.0	6.0	97.0	0.66	0.31
0.078	95.0	3.4	4.0	96.6	2.35	1.25
0.156	95.0	3.4	4.0	96.6	2.35	1.25
0.312	96.0	3.9	3.0	96.1	5.64	11.89
0.625	96.0	3.9	3.0	96.1	5.64	11.89
1.250	97.0	7.1	2.0	92.9	13.67	14.14
2.500	97.0	7.1	2.0	92.9	13.67	14.14
5.	97.0	7.1	2.0	92.9	13.67	
10.	97.0	7.1	2.0	92.9	13.67	
20.	99.0	100.0	0.0	0.0		

TOTAL FLOW CAPACITY IN MILLIDARCY-FEET (ARITHMETIC) = 30.14



PERMEABILITY AND POROSITY HISTOGRAMS

SHELL OIL COMPANY
SHELL USA 14-18
WILDCAT
SAN JUAN, UTAH

LEGEND
ARITHMETIC MEAN POROSITY
GEOMETRIC MEAN PERMEABILITY
MEDIAN VALUE
CUMULATIVE FREQUENCY
CUMULATIVE CAPACITY LOST
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